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## THE INDUSTRIALIST.

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## THE GOOD CITIZEN.

BY PROF. FRANCIS H. WHITE.

THE public conscience is aroused, and good citizens are exceedingly uncomfortable. Through the agency of Dr. Parkhurst, it goaded the people of New York until the Lexow Committee was appointed, and then continued its prodding until the unspeakable corruption of the police force was exposed. In Chicago, in Philadelphia, in San Francisco, and elsewhere the good work still goes on, revealing the weakness and wickedness of the local authorities. Yet these evils of which so much is now said are by no means new; they have been in existence for years. They have flourished because of the laziness or cowardice of the "good citizen." The words laziness and cowardice are used advisedly. It certainly was not through ignorance of the real condition of affairs. Of course, many might not have realized the full extent of the iniquity, but no intelligent man or woman in active life had any doubt that vice and bribery were going unpunished.

It seems that interest is being revived in local government. Now is the time for all who believe the community is of great importance in the larger social organism to give what impulse they can to this promising movement. Few neighborhoods, towns, or cities have developed half their possibilities in strengthening and enriching the community life.

An ideal city could manage the waterworks, the light, the transportation, and even some manufacturing enterprises, and thus secure better service and perhaps much of the profit that now goes to the private owners. But a community would not be ideal unless it had at least a majority of good citizens. Without the assurance that the government was in the hands of those upon whose honesty, patriotism, and intelligence we could rely, it would be dangerous to put more opportunity for plunder in the hands of public officials. In any event it should be done gradually, and proceed only so fast and so far as the civic virtues are developed in that place.

The local government presents the best school for citizenship. All the essentials of government may there be found in the simplest form. The larger fields of national and state politics may seem more attractive and offer richer prizes, more glory and renown. Yet the best things are difficult to obtain, and fully as real satisfaction awaits the man who will devote himself to the building up of the industrial, intellectual, or æsthetic advantages of the community in which he lives; in cultivating in himself and his neighbors the qualities that characterize the good citizen.

How every one admires a public spirited man! Sometimes, no doubt, he must submit to popular misunderstanding and unjust criticism, but in the long run, such a man, whose sympathy and charity, though beginning at home, do not end there, wins even from a reluctant community his full meed of praise.

But does the good citizen confine himself to great reforms, to great improvements? Does he wait until evils become unbearable before making an effort to check them? Does he assume that all the bad citizens are in the large cities and return thanks that he is not as other men? Surely not. He commences his reform with himself. A little self examination may reveal the fact, that if he has not been violently wicked, he has been inexcusably negligent. Perhaps he will discover that he disturbs the quiet of the night, and thus steals from the toiler and the sick the sleep necessary for the next day's struggle; he may be careless of others' rights and allow his fowl or stock to regale themselves on his neighbors' property; he may strive to escape his just share of taxation; he may be afflicted with a contagious disease and neglect to take proper precautions against its spread; he may fail to throw his influence on the side of righteousness and refuse to hold up the hands of the agencies for good; he may be too prejudiced to post himself on both sides of the questions of the day; he may be too indifferent to attend the primaries and so permit the political "boss" to dictate the nominations. In these and a hundred other ways he may be neglecting the plain duties of citizenship.

Political prophets and philosophers who have studied our institutions and life predict that the day is fast approaching when the United States will have a fearful struggle for existence. They see on the horizon clouds scarcely larger than a man's hand which some day will overspread the sky, shutting out that sun of prosperity on which we have been accustomed to rely. Such a period of "storm and stress," it may be said, we are now experiencing. But what they pre-

dict is something far worse and more fundamental. If such a time does come the only hope for the continued existence of the country will arise from the fact that the great mass of the people are patriotic, intelligent, moral,—in a word, that they are good citizens.

If, on the other hand, we are optimists, and believe the future holds in store peace, prosperity, and happiness for our nation; if we are expecting to see our country a leader in knowledge and righteousness; our expectations will never be realized unless the great mass of the people are sound. The duty of every lover of his country is plain—to create, revive, and encourage civic virtue.

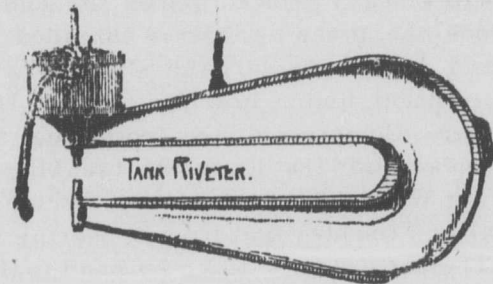
## COMPRESSED AIR IN A BOILER SHOP.

[By Prof. O. P. Hood, in the *Technic*, the journal of the Rose Polytechnic Institute, Terre Haute, Ind.]

THE rapidly widening interest in the varied fields of usefulness occupied by compressed air may make acceptable the following notes taken at a shop where a number of very successful compressed air devices were invented and developed.

The Atchison, Topeka & Santa Fe railroad shops at Topeka, Kansas, are the principal shops of the longest railroad system in the world. The shops are extensive, and contain many departments kept busy in building and maintaining rolling stock. There are to be seen a goodly number of shop "kinks" tending to cheapen the labor cost of many shop operations. One of the most noticeable is the use of compressed air in connection with a series of machines in the boiler shop. The usual din of the riveting hammer is replaced almost entirely by the swish of exhaust air from riveting machines. Drilling, tapping, reaming, punching, lifting, bolt-breaking and cutting off are all accomplished by the use of machines mostly developed in the last two or three years, and reducing the necessary number of boiler makers from many tens to a few units.

The riveting machines are in a variety of forms, but they all consist in general of an extended "C"-shaped frame, such as is familiar in punching machine forms, having a throat from one to ten feet in depth. Mounted upon this frame at some point is a cylinder with its axis in the general plane of the frame. The cylinder contains a piston and piston rod of the usual type. The riveting die is moved across the throat of the opening by the movement of the piston. The motion is transmitted from the piston to the sliding die head by simple reducing levers, by a toggle joint, or the cylinder is placed directly in line with the die. Each method adapts the machine to some special line of work. These three elements of frame, cylinder, and transmitting device are each of great simplicity, and each arrangement of a combination forms a machine in which simplicity and ease of handling are conspicuous. The largest riveter now in use in these shops is one made by Bement, originally intended for a steam riveter, the throat being six feet deep, and vertical. The cylinder is in line with the riveting die. The steam valve



device has been discarded and compressed air admitted to the cylinder by a three-way cock in a pipe tapped directly into the cylinder head. The space about the riveter is covered by a bridge crane at the top of a clear space above the riveter of a height sufficient to swing a locomotive boiler on end. A longitudinal or girt seam can be handled between the jaws of the riveter in this position and nearly every rivet in the boiler is put in in this way except the last girt seam at the center of the shell, which is put in by hand.

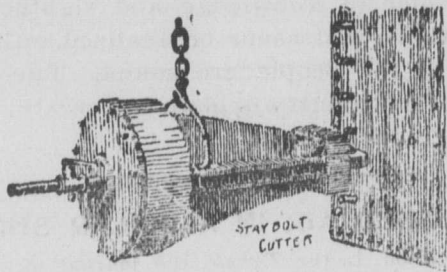
To take the place of this machine a larger one is planned, having a throat ten feet deep, the frame to be a steel casting of lighter dimensions than the heavy box form of cast iron frame used in the Bement machine.

Another heavy tool using compressed air is a flange punch capable of punching 1¼-inch holes in ¾-inch plate. The punch has a vertical throat forty-two inches deep, the frame being a heavy cast iron box form. The axis of the 18-inch air cylinder is parallel to the die, but below it. The movement of the piston



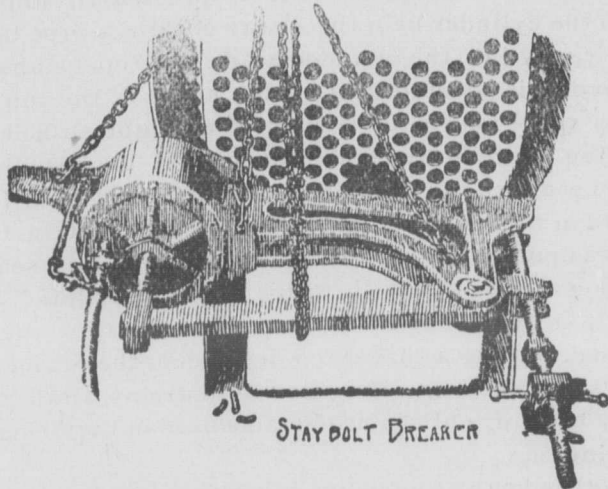
swings a vertical lever pivoted in the frame, the short end of the lever forcing the die forward. With 80 pounds air pressure about seventy tons is exerted on the die.

The machines which differ most from the ones commonly seen, however, consist of a line of portable machines. The first of these is a stay-bolt cutter invented in these shops, and being rapidly introduced into all railroad shops. It is one of those machines which, doing away with a large amount of hard labor, also does its work in a better manner than the old method, and in but a fraction of the time.



Stay-bolts from three-fourths to seven-eighths inch in diameter thickly stud the side of the locomotive fire-box, and when screwed through the two sheets must be cut off just long enough from the sheets to allow for heading over. The old way was to cut off the 700 or 800 bolts with cold chisel and hammer, which frequently jarred the thread loose in the sheet. The present cutter consists of a 15-inch cylinder, the front head of which carries an axial projection forming a frame in which are pivoted two steel levers in the plane of the piston rod, making a strong pair of cut nippers. The end of the piston rod carries a wedge-shaped block which is forced between the long ends of the cutting levers. This brings the cutting edges together, nipping off the bolt at a distance from the sheet determined by a gauge above the cutters. Air being exhausted through a three-way cock, the piston and levers are brought back by springs. The whole device is swung from a light frame by a traveling differential block, and is handled by two men very rapidly, cutting off bolts at the rate of 1200 per hour. Besides the saving in time and hard work, the cuts are all uniform and have been made without jarring the bolt in its thread.

One of the worst jobs about repairing a locomotive boiler is the removal of these same 700 or 800 stay-bolts from about the fire-box. The usual method is to cut them off inside the 4-inch space between the inner and outer shell by means of a long cold chisel held by one man while another uses a heavy sledge upon it. To clear out a boiler in this way takes a number of days of severe labor. A portable pneumatic stay-bolt breaker is also in use here. A 15-inch piston with a 11-inch stroke draws down the longer end of a lever which is pivoted in the frame of the machine. The frame is an extension from the side of the cylinder, the bottom of the cylinder and frame forming a straight surface capable of resting fairly against the boiler or the flue sheet. The short end of the lever is forked, and the frame below the lever is also forked. Through these forked portions a breaking bar ten or twelve feet in length runs back into the water space between the boiler sheets and engages a stay-bolt by means of a heavy hook forged on the end. Back of the hook the breaking bar is threaded its full length and holds a collar and slip nut which in working position find a bearing against the fork of the lever. Compressed air depressing the piston, by means of the lever the breaking bar is dragged out with a force of some fifty tons. The hook breaks off the stay-bolt from its bearing in both sheets. The bar is drawn along by hand to the next stay-bolt, the piston and lever returned by air behind



the piston, the collar and slip nut again adjusted, and the machine is ready to break another bolt. It is swung from above so as to be easily adjusted from row to row of bolts. A day's work will clear out the largest fire box by this easy method.

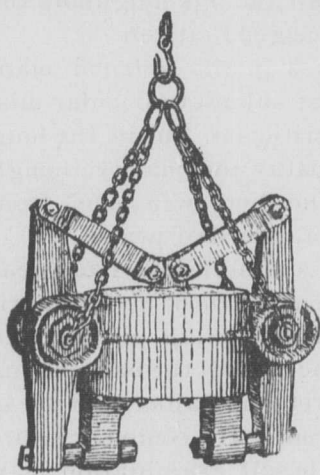
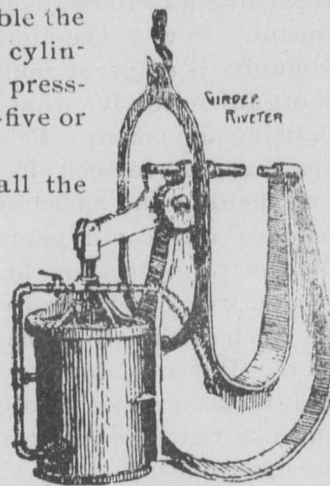
Another portable machine is called a girder riveter, but is adapted to a great variety of riveting requiring no very long reach. This riveter consists of the usual frame with a throat thirty-five inches deep and a gap of fifteen inches. The cylinder is mounted in a frame so that the piston rod is at right angles to the travel of the dies, motion being transmitted by means of a bell lever crank. This arrangement makes the pressure on the rivet substantially the same whether it is caught at the beginning or the end of the 3-inch stroke of the die. It also brings the machine into a rather compact form and makes it convenient to swing by a wide-spreading bail attached to the center of gravity. As all parts of the machine can swing through this bail it can be used in any position—horizontally, inclined, or vertically. It can be attached to a base and used as a stationary riveter, also. In order to get the required fifty tons pressure on the rivet and keep the cylinder diameter within reasonable limits so as to pass through the bail, a unique arrangement of cylinders was devised. A fixed diaphragm divides the cylinder into two short cylinders. On the single piston rod two pistons are fastened, one in each short cylinder. Air is admitted simultaneously on the same side of each piston, thereby having the effect of a single cylinder of double the area. Either one or both cylinders can be used, giving a pressure on the rivet of twenty-five or fifty tons.

The most elegant of all the series is a tank riveter, and it also has this double arrangement of pistons. The frame of the tank riveter is especially light and graceful, being a soft steel casting. The double cylinder is placed in line with the riveting die, the die being fastened directly to the end of the piston rod. The machine can be swung either horizontally or vertically, and with its reach of five feet, and small dimensions about the die head, it can reach nearly every rivet in a tender tank. Its capacity, about 300 one half inch rivets per hour, is not limited so much by the machine as by the ability of the rivet boy to heat and handle rivets.

The same can be said as to the capacity of the mud ring riveter, a special machine looking entirely different from the rest of the class. This machine is adapted to drive  $\frac{3}{4} \times 4\frac{1}{2}$  inch bolts through the mud ring and plates about the fire box, the boiler being placed bottom upwards and the riveter swung from a crane. The device consists of a 15-inch cylinder with the thrust of the piston rod upward. By means of two links forming a toggle joint, the upward movement separates the upper ends of the two vertical levers which are pivoted to the re-enforced sides of the cylinder. The lower ends of the levers force the riveting dies together through bearings projecting downwards from the lower cylinder head. The whole machine could be put into a box 32x18x28 inches, and is very easily handled. The stroke of the piston is short, but by means of the toggle a pressure in the neighborhood of one hundred tons can be had on the rivet.

One very desirable feature of all these riveters when used with compressed air is the fact that the first part of the blow on the rivet is comparatively quick, having a local effect on the head of the rivet, and thereby forming head enough to grip the plates firmly together, while the latter part of the stroke is a slow and powerful pressure, upsetting the rivet its full length and completely filling the hole. In these respects it seems to work much better than the usual hydraulic riveters.

One of the handiest riveters for general riveting where a deep throat is not required consists of a single vertical cylinder containing two separate pistons. Air being admitted between and separating the two pistons, the rods force apart the ends of two horizontal levers which reduce the motion about three to one. The short ends of the levers carry the riveting dies. The levers are pivoted to an extension on the side of the cylinder forming the frame of the machine. The whole device is swung from the traveller on a crane, and is handled about as easily as a common pair of



MUD RING RIVETER.

pincers. Air is admitted and exhausted from between the pistons through a three-way cock.

Most of the truck frames on the Santa Fe system are of iron and have from forty to sixty  $\frac{3}{4}$ -inch rivets which can be driven as fast as a boy can handle them from a heating furnace. Two frames a day from a gang of three used to be considered a fair day's work, while now the same gang turns out one an hour with much less labor, and with but little extra effort a frame can be put up in from thirty to forty-five minutes. In straight work about 1000  $\frac{3}{4}$ -inch rivets can be put in with one less man while 100 could have been put in by hand.

(To be continued.)

## A GROWING INDUSTRY.

BY JOSEPHINE C. HARPER.

SOME of the industries of the country are developed to a high degree, some even to the point of no adequate profit. Others are still in their infancy. To this latter class belongs the industry of raising chickens for the purpose of furnishing eggs and chickens for the market. As cattle and hogs decline in profit, there is a growing tendency to pay more attention to fowls.

For the money invested and the skill and labor required, the chicken industry yields about as large a return as any occupation.

The United States imports large quantities of eggs from Canada and Europe every year. At one time the chicken industry was in danger of going into a decline on account of the large importation of eggs; and Congress laid aside the serious matter of the coinage of silver and the mining interests of the western states and took "biddy" and her golden egg under consideration. After a careful investigation, a duty was laid on the product of her foreign sister with the hope, it is supposed, that the American hen would show what she could do under favoring circumstances. The following facts are gleaned from the census return of 1889: The entire output of silver in the United States, including the Territories, was \$66,396,988. Of this amount the three leading mining States produced—Colorado, \$23,757,751; Montana, \$17,468,960; Utah, \$9,057,014; the remainder was produced by the remaining States and Territories. Some States produce no silver at all, while there is not a State or Territory in the Union where the hen industry is not engaged to a greater or less extent.

The mate to the symbol of victory exhibited on ratification days scratched away regardless of the millions sunk in mines, conscious all the time that in the end she would come out victor—that her product would far exceed that of the mines. An egg is a small thing, easily broken, worth only a trifle, yet in the aggregate amounting to considerable. In the year above referred to, the value of the eggs was something over \$163,000,000, or seven times the value of the silver output of the leading mining State for the same year. The chickens amounted to \$142,000,000, or six times the silver mined in Colorado. The value of the eggs and chickens for 1889 amounted to \$305,000,000, or four and one-half times the entire silver product for the same year.

To make the keeping of fowls a success requires care and labor on the part of the owner. A good, roomy, well-lighted and ventilated house is a necessity. In the summer hens suffer from heat, and frequently die of it when required to roost in a house which affords no means of ventilation. Comfortable nests should be provided, and the house kept free from insects by occasionally spraying with the proper preventatives. The kind and amount of food given to a flock of laying hens is a matter worthy of attention. The food should be such as to produce the greatest number of eggs at the least cost. One writer says that one hundred hens will live and thrive on six quarts of corn per day, with meal or other light food. A woman of many years' experience in keeping hens for eggs alone feeds oats or wheat instead of corn. In winter the hens are given one warm meal each day, consisting of meal, bran, or both mixed with some boiled vegetables, such as potatoes, beets, or turnips raised for this purpose; and she always has eggs to send to market when they are scarce and the price high.

As a rule hens are indifferently and insufficiently watered. They enjoy clean water and plenty of it in summer and luke-warm water in winter. Attention to the minor details will more than compensate for the trouble required.

The man that will not provide good bedding for his cows is not liable to brush filth off the udder before milking.



FEBRUARY 9, 1895.

## THE INDUSTRIALIST.

## Calendar.

1894-95.

Fall Term—September 13th to December 21st.  
Winter Term—January 8th to March 29th.  
Spring Term—April 1st to June 12th.  
June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20th.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

The short lecture course for farmers is fairly well attended, with prospects for more visitors next week.

Mr. Teeters, a ranchman from the western part of the State, visited College Tuesday in company of Dr. Hatch.

Miss Angie Henderson, of Ohio, is the guest of Miss Laura Day. She visited College several times during the week.

W. H. Phipps, Fourth-year, read a paper, "The Japanese as a People," before the Missionary Society of the Christian Church, last evening.

Fifteen tons of coal were burned in the furnaces of the steam plant, Wednesday, in the effort to heat the buildings. The College used three hundred tons during January.

The "unprecedented" cold snap of this week caused great discomfort in most classrooms, necessitating short recitations and the wearing of wraps. The College thermometer recorded a temperature of fifteen degrees below zero Wednesday morning.

Max O'Rell's lecture on "Her Royal Highness—Woman," at Wareham's Opera House, Thursday evening, was a treat to the large audience. The speaker's native wit, inimitable gestures and facial expression, and occasional "Frenchy" English, combine to make an audience his slaves during the two hours of his lecture.

C. V. Holsinger, Fourth-year, has a brother on the border of the Japan-China war. He is a naval cadet on the *Baltimore*, one of our famous "White Squadron," now at the Asiatic station as flagship under command of Rear-Admiral Carpenter. Another year of service on shipboard will complete Cadet Holsinger's course, consisting of four years at the Naval Academy and two years at sea.

The usual term dinner to the Regents and Faculty by the Cooking Class was served Wednesday evening. Sickness in their families, together with the cold storm, prevented the attendance of several members of the Faculty. The sewing room—where the dinner was served—was so cold that adjournment to the President's office was an agreeable change, and a delightful impromptu "experience meeting" followed.

The theft of overcoats, gloves, overshoes, scarfs, hats, etc., from students for several months past led to the arrest and conviction, this week, of two students, H. L. Wilson and G. T. Pickrel, in whose possession was found a great quantity of plunder of a miscellaneous character, including books from the library which had been mutilated in the hope of destroying their identity. Many of the stolen articles were returned to their owners, and others await identification at Judge Harper's office. No other persons are implicated.

Yesterday, in Chapel, Prof. Will defined wages, for the purpose of his discussion, as the pay of persons who work for others, whether known as wages or salaries. A generation ago many manufacturers owned their own tools and shops, and employed themselves. But the concentration of capital and the introduction of labor-saving machinery has driven out the small concerns and forced their owners into the wage-working class. Wages constitute the chief income of the wage-workers of today, although they are often advised to invest their savings so as to draw rent and interest. Men are like trees; as they grow, they require more nourishment. Theoretically, the majority rule in this country. So, as the wage-earners are in the majority, they must rule. As a stream can never rise above its source, if the wage-workers be ground down and imbruted, what is to become of our civilization? The wages question is important because of its present wide extent of the wages system. Why have we idle men who are able and willing to work, while there are millions of capital seeking investment, and also millions of acres of land out of use? It is this phenomena that students of wages seek to solve. Ricardo spoke of labor as a commodity to be bought the same as meat. He said that it had a natural price and a market price,—the natural price being the wages which would support the laborers while they raised enough laborers to supply the demands of business when the older generation was gone. The market price was the wages which must be paid for labor. Also the market price and natural price tended to become the same. This, Lasselle characterized as the "Iron Law of Wages" and turned his guns against the whole wages system. Growing naturally out of Ricardo's doctrine came the doctrine of the "Wages Fund." According to it there is a fixed amount of capital which can be paid as wages, and this sum divided by the number of workers will give the average wage. The only way by which wages can be raised is by increasing the dividend or decreasing the divisor. But some writers argue that the

laborer is paid from the goods he produces, and that the employer does not advance to the laborer; but that, in reality, the worker advances his labor to the employer while some merchant advances supplies on the individual worker's credit. Walker teaches that the whole product is divided into four parts. The portions which go as rent, interest, and profit are fixed by certain laws, and the workers get the remainder. So wages may be increased by producing more goods. But workers may be dismissed and wages cut because too much wealth has been produced. Producers produce for buyers. The rich buy what they want and the poor buy what they can. When this effectual want is supplied, no more goods can be sold, and if more than this is produced, there is a glut in the market because the wealthy can consume no more. If a large per cent of the wealth goes into the hands of a few, they cannot use enough goods to redistribute it, so it piles up and workers are discharged. If wages are to rise, the great stream of wealth going into the hands of a few and there stagnating must be checked. Grossly unequal distribution is bad for those who get too much, for those who get too little, and it is also bad for trade. Divert the wealth into the great current where it will do more good. We can do it if we will.

At the meeting of the Manhattan Horticultural Society, last week, Assistant Horticulturist Sears was elected President. He also read a paper on strawberry culture, of which an abstract is here presented. Judicious care is required from beginning to end. For location a sandy loam is perhaps the best. Soil should be summer fallowed if possible, well worked, and free from weeds. One acre well cared for is a good patch. Experiments at the College for the last few years show the Warfield to be the best variety in many respects; during the last season one acre would have yielded 237 crates, or over \$500 worth. Plant good, strong, young plants with plenty of roots, either in fall or spring. Do not plant any with brown colored roots; they are old vines. Water well when planting, and to ensure success it is desirable to irrigate once at least during a dry season. Rows should be four feet apart and plants one foot apart in the row. Spread on clean, bright straw in early winter when the ground first freezes. Leave as much in the row in the spring as the plants will come up through, the object being to keep the ripening berries from the ground. Cultivate with a horse cultivator, leaving only the finishing touches for the hoe. Care must be used in choosing varieties that have both pistillate and staminate flowers, or else plant occasional rows of staminate sorts, such as Chas. Downing, Jessie, etc. Warfield, Gandy, Buback, Parker Earl, Great American, are all good varieties. Bed should be occasionally renewed.

## GRADUATES AND FORMER STUDENTS.

M. V. Hester, '94, writes from Haviland, Kan., that he is enjoying life very much, and has a flourishing school of twenty-five pupils.

Kate Pierce, Third-year in 1893-4, is laid up for several weeks to come as the result of a fall. Her school at Winfield, Iowa, is taught by her father.

A letter from J. W. Van Deventer, '86, of Sterling, Colo., tells of his prosperity, and from the tone of his letter he still esteems his Alma Mater very highly.

Jane Tunnell, '88, is teaching in the Manhattan schools as substitute for Miss Emma Spahr, who is confined to her room by a dislocated ankle.

J. F. Carlson, Second-year in 1887-88, graduated at the State University in June, 1894, and is taking a post-graduate course at Columbia College, New York City.

Rev. Clarence D. Wood, First-year in 1880, is now located at Hutchinson as Sunday School Missionary for the Presbyterian Board of Publication and Sabbath School Work. His work includes the whole of the Larned Presbytery.

## College Extension.

The tenth annual institute for farmers was held, as advertised, at Stockton, Rooks County, January 31st and February 1st. The severe weather, together with the prospect for a blizzard, interfered somewhat with the attendance; nevertheless the feeling was general that the institute was a success. The College was represented by F. C. Burtis of the Department of Agriculture, and Prof. Will.

Following is the program:—

Successful Butter-making on the Farm ..... J. W. Graham, Mrs. Walter Green  
Necessity of a Good Farm Garden ..... Frank Shuts  
My Orchard ..... W. Parkhurst, Chas. Martin, E. D. Balmer  
Profits in Raising Cattle for the Feed Lot ..... Henry Kern  
Twenty Years Hence—A Prophecy ..... Ustle Hubbell  
Wealth Distribution ..... Prof. T. E. Will  
The Balanced Ration; or, Stock Feeding by Scientific Methods ..... S. I. Wilkin  
How to Keep the Boy on the Farm ..... John Crane  
The Causes of Unprofitable Wheat Raising ..... G. W. Husted  
Educational Advantages of Farm Life ..... Mrs. C. W. Smith  
Agriculture in Arid Kansas ..... M. J. Wells  
Why I Stick to Swine Breeding, Crop or no Crop ..... W. R. McNutt  
The Culture of Sorghum for Feeding ..... F. C. Burtis  
Thoroughbred Cattle Against "Scrubs" ..... C. C. Slasson  
How to Increase the Precipitation of Moisture in the Semi-arid Belt ..... J. T. Locke, C. A. Crane  
The Farmer and His Responsibility in Sanitary Matters ..... Dr. E. J. Donnell  
Profits in Poultry ..... Mrs. T. F. Johnson  
A Busy Housewife's Experience with Poultry ..... Mrs. John Emigh

As Stockton is in the semi-arid belt, successive droughts and crop failures have aroused a deep interest in irrigation; while the feeling seems to be growing that agriculture should give place, in a large part, to stock-raising. A proposal, however, to abolish the herd-law and introduce free range

aroused animated discussion, most of it hostile to the change.

Mr. S. I. Wilkin, who presented an able paper on "The Balanced Ration," was a Third-year at this College in 1891-2. He is showing by his works his faith in applying science to agriculture.

Mr. Tuepfer, President of the institute, is a farmer of almost world-wide experience; Secretary Bartholomew, while an active farmer, is one of the most energetic and successful practical botanists in the State, having the best private collection of fungi in Kansas, his collection being second only to that at Manhattan.

Within the past ten years the College has sent perhaps a majority of the Faculty, at one time or another, to institutes at Stockton. T. E. W.

## AT HIAWATHA.

The farmers' institute held at Hiawatha, Brown County, January 24th, 25th, and 26th, was only a partial success, owing to the severe storm which set in on the night of the 24th and continued for the rest of the session. It made it impossible for the farmers who had to drive some distance to attend. The first day, however, Thursday, the 24th, was auspicious and the meeting was well attended. This day was given up to the Inter-state Swine Breeders' Association, and the subjects treated had more or less bearing on hog raising. Some excellent papers were presented, followed by lively discussions. The subject of hog cholera, and how to prevent it, as well as how to cure it, was a prominent feature of the discussion. The sentiment of the meeting was that there was, as yet, no known cure for hog cholera, but that it was possible by good sanitary measures to keep the enemy at bay. Pure drinking water and clean quarters were emphasized as necessary.

"The Hog from Farrowing to Weaning," by C. W. Thernanson, elicited favorable comment. In the evening, Professor Georgeson addressed the meeting on the subject of "Maintaining the Fertility of the Soil."

The next day, the papers were on the same general subject, including the place of clover on the farm, the caring for and use of barnyard manure, and the treatment of the soil to increase its water-holding power. Professor Fairlyer read a paper on the latter subject. These were followed by papers on orchards and spraying.

## The Hamilton Annual.

Last Saturday night the Hamilton Literary Society gave its ninth annual exhibition.

As has been their custom before, the Hamiltons furnished their own orchestra, and began their program with an overture which was a credit to their musical talent.

After prayer by Pres. Fairchild, Pres. Johnson, in a few well-chosen words introduced the Society. The program was opened by Mr. R. J. Barnett. His address, entitled "The Student and the Mysterious," was pronounced by good judges to be one of the best student productions ever heard in Chapel.

The chorus which followed was encored and responded with an ingenious parody on "Swim Out, O'Grady."

The debate was an energetic discussion of socialism and individualism. Mr. Pincomb and Mr. Kellogg showed some good thinking and effective presentation.

The next space for music was very acceptably filled by H. G. Johnson with a baritone solo, and Mr. J. J. Johnson delivered in a handsome manner, his oration on the thought, "Labor Omnia Vincit." This was followed by an excellent number of the Recorder, E. B. Coulson, editor. It was more or less humorous throughout, and the three amusing and seemingly exhaustive "Elucidations" gave only a suggestion of the fun it contained.

At a sign from the President the "Hamilton Quartette" appeared "under a cloud" which, dense as it was, could not disguise the well-known figures of Messrs. Norris, Lyman, Conrad, and Peter. After the first song the audience called them back, but was hardly prepared for the combination of Ethiopic emotions and melody they brought with them. They sang "Home Made Chicken Pie" and responded to a second encore with an original verse which seems to have been inspired.

While preparations were going on for a series of impersonations, Mr. Thomas came before the curtain and recited William Walter Foss' tender piece entitled "Our Little Boy That Went Away." It was good. A touch of pathos softened the humor before and after.

The curtain rose and the assembly witnessed a laughable representation of some of the not altogether imaginary phenomena associated with the different classes in college.

This was followed by an instrumental trio on banjo, mandolin, and guitar, which was encored.

"Be a Physiognomist," an oration by O. A. Otten, was the last on the program. It was well written, and would have been interesting to a good many who neither took the trouble to listen themselves nor gave others the opportunity of listening.

The program was longer than usual, and rather more devoted to fun, but during the hour and a half the audience stopped laughing only long enough to see what was coming next. Many bits of wisdom were dropped—gems not to be set in ordinary phrases.

The Hamiltons certainly have not lowered their standard in the "heavy" work, and for originality



and humor in the lighter amusements they have set a pace which will keep the other societies thinking for a year or two. T. W. M.

### FARMERS' INSTITUTES.

#### Held Under the Auspices of the Agricultural College.

Institutes will be held at the places and dates as stated below, and the College will be represented at these institutes by the members of the Faculty named;—

Peabody, Marion County, February 14 and 15; Professor Popenoe and Mrs. Kedzie appointed.

Clay Center, February 15 and 16; President Fairchild and Professor Lantz appointed.

Haven, Reno County, February 21 and 22; Professor Mayo and Mr. Burtis appointed.

Cherryvale, Montgomery County, February 21 and 22; Professors Popenoe and Georgeson appointed.

Washington, Washington County, February 28 and March 1; Professors Walters and Mason appointed.

WaKeeney, Trego County, March 1 and 2; Professors Georgeson and Graham appointed.

#### Next Week's Lectures.

##### MONDAY, FEBRUARY 11th.

10:30 A. M. Professor Mayo, Parasitic Diseases of Animals and Their Treatment.  
1:30 P. M. Professor Mason, Propagation of Orchard Trees.  
3:00 P. M. Professor Walters, The Home Lot.  
7:30 P. M. A. E. Jones of Topeka, The Dairy Cow.

##### TUESDAY, FEBRUARY 12th.

10:30 A. M. Professor Georgeson, Principles of Feeding Live-Stock.  
1:30 P. M. Professor Kedzie, Meats.  
3:00 P. M. Professor Popenoe, Beneficial Insects.  
7:30 P. M. Hon. T. M. Potter of Peabody (President State Board of Agriculture), Our Heritage.

##### WEDNESDAY, FEBRUARY 13th.

10:30 A. M. Professor Failyer, Water for Home Use.  
1:30 P. M. Professor Graham, Farm Accounts.  
3:00 P. M. President Fairchild, The Farmer Makes His Farm.  
7:30 P. M. Judge J. S. Emery of Lawrence (Lecturer National Irrigation Association), Irrigation.

##### THURSDAY, FEBRUARY 14th.

10:30 A. M. Professor Mason, Varieties of Vegetables for the Farm Garden.  
1:30 P. M. Professor Mayo, Contagious and Infectious Diseases: Their Cause and Prevention.  
3:00 P. M. Professor Georgeson, Necessity for Maintaining the Fertility of the Farm.

##### FRIDAY, FEBRUARY 15th.

10:30 A. M. Professor Mason, Soil Management and Irrigation in the Garden.  
1:30 P. M. Professor Hitchcock, Relation of Plants to Climate.  
3:00 P. M. Professor Will, Money, II.  
7:30 P. M. Hon. W. J. Bailey of Baileyville, The Practical Use of Education to the Farmer.

##### SATURDAY, FEBRUARY 16th.

10:30 P. M. Professor Georgeson, Home Dairying.  
1:30 P. M. Professor Mason, Fruits for Home Use and Market.

#### Board Meeting.

The meeting of the Board of Regents from Tuesday afternoon to Thursday evening found all the members present except Regent Street, who was detained by his duties as Representative in the State Legislature. Regent Keley, Vice-President, presided.

Resolutions were passed authorizing the Station Council to enter into agreement with the U. S. Department of Agriculture for experiments in forest culture under direction of the Chief of the Forestry Division, and indorsing House Resolutions 8389 and 8390 providing for instruction in forestry at the State Agricultural Colleges and in the U. S. Department of Agriculture.

The degree of Bachelor of Science was conferred upon M. V. Hester as recommended by the Faculty, his name to be enrolled in the Class of '94.

The estimates of expenses made by the Station Council for the current quarter were approved, and \$10.00 was allowed in settlement of a claim against the Farm Department, and \$4.00 for advertising.

The plan of Capt. Cavanaugh for making the College Cadets a provisional battalion of the National Guards, with duties confined to those required at the College, was approved. It was decided to consider hereafter the chevrons and shoulderstraps a part of the uniform, and President Fairchild was directed to present at the April meeting specifications and estimates for locked boxes for each student's equipment in the armory.

The Loan Commissioner and the Secretary were appointed a committee to investigate the feasibility of investment of endowment funds in bonds from outside the State, and to make inquiries as to the feasibility of anticipating the July payment of interest for current expenses.

The following resolution was adopted:—

Resolved, That the Faculty, through the President, submit to the Board of Regents at its next meeting, for approval or rejection, written reports of a change of the course of study, which will permit the introduction of the study of Economic Science, not later than the first term of the third year, and will give not less than six terms of study to Economic Sciences, including one term of History, one term of Civics, and one term of Psychology.

The Board adjourned to meet on Wednesday, April 3rd, at 3:30 P. M.

There will be a grand gathering of the National Educational Association at Denver next July to which every friend of education is invited. Railroad tickets over all roads will be sold for the round trip at the price of fare one way plus \$2.00 for membership in the Association. Meetings of the Association will be of general interest, the most noted of leaders in college and school work being gathered there, and excursions in every direction from Denver will be provided at cheap rates. Railroad tickets deposited at Denver will be good for returning until September first. Persons desiring fuller information may apply to Prof. J. N. Wilkinson of Emporia, State Manager, or to John MacDonald of Topeka and Pres. Geo. T. Fairchild of Manhattan, Directors.

### The Weather for January, 1895.

BY C. M. BREESE, OBSERVER.

**Temperature.**—The mean temperature was 22.64°, which is 2.04° below normal. There have been twenty-one warmer and thirteen colder Januaries in the period covered by our record; the warmest being in 1880, when the mean was 37.82°, and the coldest in 1886, when it was 12.35°. The highest temperature was 72°, on the 20th; the lowest, -8°, on the 12th,—a monthly range of 80°. The greatest daily range of the thermometer was 43°, on the 19th, and again on the 22nd; the least, 4°, on the 25th. The warmest day was the 20th, with a mean temperature of 59.75°; the coldest, the 12th, with a mean of 3.75°. The mean temperature at 7 A. M. was 15.12°; at 2 P. M., 32.25°; at 9 P. M., 21.67°. The mean of the maximum thermometer was 36.71°; of the minimum, 10.71°; the mean of these two being 23.71°. The warm week ending on the 20th broke up the ice in the Blue River, except in shaded spots, but the cold weather immediately following closed the river again, and the close of the month finds the ice about a foot in thickness.

**Barometer.**—The mean pressure for the month was 28.86 inches, which is .01 inch below normal. The maximum was 29.57 inches at 7 A. M. on the 8th; the minimum, 28.297 inches, at 2 P. M. on the 5th,—a monthly range of 1.273 inches. The mean at 7 A. M. was 28.875 inches; at 2 P. M., 28.837 inches; at 9 P. M., 28.868 inches.

**Cloudiness.**—The per cent of cloudiness was 35.48, which is 6.52 per cent below normal. The per cent of cloudiness at 7 A. M. was 46.77; at 2 P. M., 38.7; at 9 P. M., 20.97. Three days, the 4th, 5th, and 25th, were entirely cloudy; one, the 24th, was five-sixths cloudy, five were two-thirds cloudy, two were one-half cloudy, six were one-third cloudy, five were one-sixth cloudy, and nine were cloudless.

**Precipitation.**—The total fall of rain and melted snow was .69 inch, which is .09 below normal. The total snowfall was 6.1 inches. This precipitation was well-distributed through the month in six separate rains and snows, about one inch of snow remaining on the ground at the close of the month. The condition of the wheat crop has not changed materially since the close of December; the ground is very dry, and will need abundant rains in the spring months to be in even fair condition for working.

**Wind.**—The wind was from the north twenty-three times; south, twenty-one times; southeast, seventeen times; northeast, nine times; southwest, seven times; west, seven times; east, six times; and northwest three times. The total run of wind for the month was 6429 miles, which is 272 miles below the average. This gives a mean daily velocity of 207.39 miles, and a mean hourly velocity of 8.64 miles. The highest daily velocity was 478 miles, on the 20th; the lowest, 32 miles, on the 27th. The highest hourly velocity was 32 miles, on the 18th, between 5 and 6 A. M.

The following tables give a comparison with preceding Januaries:—

January.	Number of Rains.	Rain in inches.	Per cent of Cloudiness.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1859	4	1.50	49	SW	31.03	59	-3	28.79	29.30	27.90
1860	1	.60	36	SW	29.97	70	-6	28.70	29.19	28.10
1861	3	1.35	41	SW	23.61	60	-9	28.72	29.23	28.20
1862	3	1.50	53	NW	18.03	42	-6	28.78	29.14	28.08
1863	2	1.47	40	SW	36.52	69	-4	28.78	29.30	28.20
1864	3	.44	51	NW	23.17	60	-13	28.76	29.25	28.41
1865	2	.33	51	NW	27.04	49	-5	28.76	29.25	28.41
1866	2	.65	50	N	22.57	47	-12	28.76	29.25	28.41
1867	2	.31	43	SW	18.15	61	-12	28.76	29.25	28.41
1868	2	1.15	42	SW	30.46	54	9	28.76	29.25	28.41
1869	8	.05	44	SW	27.35	58	-3	28.76	29.25	28.41
1870	2	.53	52	SW	28.85	62	-7	28.76	29.25	28.41
1871	4	.13	40	SW	24.90	51	-8	28.76	29.25	28.41
1872	2	.84	35	SW	19.66	49	-14	28.76	29.25	28.41
1873	5	.50	57	SW	26.41	60	-4	28.76	29.25	28.41
1874	3	.22	57	NW	14.87	48	-17	28.76	29.25	28.41
1875	0	.00	11	SW	33.85	62	-7	28.76	29.25	28.41
1876	4	.66	48	SW	25.20	64	-11	28.76	29.25	28.41
1877	6	2.35	50	NW	33.09	55	0	28.76	29.25	28.41
1878	3	.56	54	S-SW	37.82	61	15	28.76	29.25	28.41
1879	4	.55	61	SW	19.35	49	-18	28.76	29.25	28.41
1880	4	.42	59	SW	31.64	60	-1	28.76	29.25	28.41
1881	4	.33	58	SW	18.02	55	-15	28.76	29.25	28.41
1882	1	.30	38	SW	21.46	63	-22	28.76	29.25	28.41
1883	4	1.08	34	SW	16.27	44	-18	28.76	29.25	28.41
1884	5	1.36	52	NW	12.35	51	-19	28.76	29.25	28.41
1885	4	.68	28	SW	22.05	62	-23	28.76	29.25	28.41
1886	2	.65	22	N	15.42	63	-26	28.76	29.25	28.41
1887	3	.78	25	N	27.84	53	1	28.76	29.25	28.41
1888	5	2.31	35	NW	23.10	62	-19	28.76	29.25	28.41
1889	4	1.63	42	NW	29.44	57	2	28.76	29.25	28.41
1890	4	.78	18	SW	22.25	64	-26	28.76	29.25	28.41
1891	1	.02	26	N	22.99	53	-1	28.76	29.25	28.41
1892	2	.71	29	N	26.60	74	-14	28.76	29.25	28.41
1893	6	.69	35	N	22.64	72	-8	28.76	29.25	28.41
1894	114	2.743	1466	863	97	2023	326	635	06	
Means	3	.78	42	SW	24.68	58	-9	28.87		

#### WIND RECORD.

January.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1890	5980	192.90	419	64	8.04	28
1891	6842	220.71	491	79	9.20	56
1892	6517	210.23	460	51	8.76	29
1893	6667	215.06	496	55	8.96	36
1894	7774	250.77	413	90	10.45	33
1895	6429	207.39	478	43	8.64	32
Totals	40209	1297.06	2957	362	54.05	214
Means	6701	216.18	493	60	9.01	36

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner. Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

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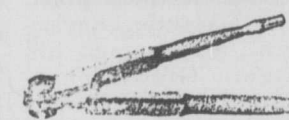
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# THE INDUSTRIALIST.

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Professor of Military Science and Tactics.  
THOMAS E. WILL, A. M.,  
Professor of Political Economy.  
MISS JULIA R. PEARCE, B. Sc.,  
Librarian.

\*On leave of absence for one year.

#### ASSISTANTS AND FOREMEN.

C. M. BREESE, M. Sc., Assistant in Chemistry.  
GRACE M. CLARK, B. Sc., Stenographer in Executive Office.  
LAURA G. DAY, B. Sc., Assistant in Sewing.  
RUTH T. STOKES, B. Sc., Assistant in Household Economy.  
WM. BAXTER, Foreman of Greenhouses.  
W. L. HOUSE, Foreman of Carpenter Shop.  
H. K. BROOKS, Foreman of Iron Shops.  
L. A. MCKEEN, Foreman of Farm.  
C. A. GUNDAKER, Engineer.  
A. C. MCCREARY, Janitor.  
JACOB LUND, M. Sc., Fireman and Steam-fitter.

#### ASSISTANTS IN EXPERIMENT STATION

F. A. MARLATT, B. Sc., Entomology.  
F. C. BURTIS, M. Sc., Agriculture.  
D. H. OTIS, B. Sc., Agriculture.  
F. C. SEARS, B. Sc., Horticulture.  
J. B. S. NORTON, Botany.  
F. W. DUNN, B. Sc., Irrigation.

### COMPRESSED AIR IN A BOILER SHOP. II.

(By Prof. O. P. Hood, in the *Technic*, the journal of the Rose Polytechnic Institute, Terre Haute, Ind.)

THERE has been considerable experimenting in this line of developing a light portable rotary machine that can be used for the various operations of drilling, tapping, reaming, etc. For some purposes the little three-cylinder Brotherhood engines are used. For re-boring locomotive cylinders in place, milling port openings, tapping, etc., the engine gives a uniform motion and can be comparatively easily shifted from place to place on trucks. It is of course too heavy for a hand tool. Most any form of rotary engine which has been developed would do, and the one in use at these shops is adopted from an ancient form of rotary engine known as Mackenzie's. Most of the members of this interesting class of engines can be used either as motors, meters, pumps, or blowers, and Mackenzie's rotary is very like a certain molasses measure which is not uncommon in these days. The engine consists of a short cylinder containing a circular piston of less diameter, internally tangent to the cylinder, and whose axis is placed parallel to and eccentric with that of the cylinder. Through the diameter of the piston a sliding diaphragm with movable packing strips on the ends divides the cylinder into two equal parts. Air being admitted behind the diaphragm, it finds the smaller side of the cylinder blocked by the tangent piston, and therefore sweeps the diaphragm through the crescent space between the piston and cylinder until it finds an exhaust on the other side. With air at 100 pounds pressure, the diaphragm carries the piston at a rate of about 1,500 revolutions per minute. The high rate of speed is reduced by gearing in the proportion of four to one, six to one, and twelve to one, the machines weighing respectively 28, 31, and 33 pounds. The air is not used expansively in such a device; and it is said that these machines use five or six cubic feet per minute. While it cannot be said that these tools are comfortable to work with, on account of the jar which the necessarily unbalanced piston parts give to a man holding the machine, still they greatly reduce the labor of many operations and are light enough to be used in the manner of a hand tool. It is said that two and one-half horse power can be developed by these rotaries.

So far a suitable compressed air calking tool has not been found for this shop, although used in some other places.

In these shops there are many compressed air hoists, such as have come into extensive use in the last few years, the only distinguishing feature of these being the rather unexpected good work done by a very cheaply built affair. The hoists range from four to ten inches in diameter and are of various lengths. They consist of a piece of ordinary wrought-iron pipe threaded at both ends and covered with a common cast cap. The lower cap is provided with an ordinary packing gland in which steam packing is used to make a joint with the hooked lifting rod which passes through the gland to the piston. The wrought iron pipe forming the cylinder is not bored out or treated in any way. The piston heads consist of a series of iron discs fastened by nuts to the lifting rod. Between the two discs next the air end of the lift a ring of square steam packing is forced to a fit against the pipe by the air pressure being admitted within the ring between the discs. Beyond the ring packing a solid disc of soft rubber such as is used for cold water valves of pumps forms supplementary packing. Little or no trouble is experienced with this very cheap construction. These are used hung from the traveler of a crane, or invented for lifting cars, trucks, etc., from below, or horizontally for pulling for various purposes. The compressing plant at these shops is home-made. A 16x42-inch Corliss engine was in use, furnishing but a part of its rated capacity. The back head of the cylinder was replaced by one carrying an air cylinder 12½x42, and packing glands for the piston rod, which was extended and furnished with another piston in the air cylinder. The air valves are in the heads of the air cylinder, and the whole is water-jacketed. The piston speed was reduced to about 350 feet per minute. Air is taken directly from the engine room, and fortunately Kansas air is usually dry. It is piped through the shops in 3-inch overhead mains into various receivers located near the larger machines. There is besides the capacity of the many pipes a reserve storage capacity of about 700 cubic feet, sufficient to run the plant for some hours. No special pains are taken in piping except

to arrange so that water deposited by the air shall drain into places not liable to freeze and can be easily discharged otherwise than through the machines. Air is carried to the various machines from the conveniently located pipe connections by means of hose and couplings such as are used in air-brake practice or in common water hose from one half inch to one inch in size. It can be said that no trouble is experienced from the leakage of air, which is notoriously hard to hold. The reason is that the numerous leaks which undoubtedly discharge considerable power at the 100 pounds pressure usually carried, are allowed to worry no one. The compressed air is cheap in this case, and the refinements necessary to confine it more closely would probably cost more in this case than the air wasted. If the benefits derived from its use were not so very great, this item of waste would probably deserve and receive more attention.

Compressed air possesses many advantages over its numerous rivals, which have all had a fair trial for these purposes. An electric motor to develop equal power with the small air rotary would be too heavy to handle as a hand tool. Many men are afraid at first of the subtle fluid in any form, who would not think of objecting to an air machine. There is no danger from a break, or a leak, or a blunder. It is better than high pressure hydraulic machinery, principally on account of the fact that no piping is necessary to take away the exhaust. The lower pressure requires no special care in piping as in hydraulic practice. It is altogether more flexible in its capabilities for operating portable tools. In the riveters the character of the blow given is an important advantage. All of these tools can be used with steam, but besides rendering tools too hot to handle comfortably steam requires a double system of piping and much loss by condensation. Compressed air can be carried long distances into unhandy places with such ease, and kept so long a time with so little loss, that it seems certain that its present popularity in preference to steam, water, or electricity in railroad shops will be lasting and will extend into many new fields.

### LIGHT HOUSEKEEPING FOR FOUR PERSONS.

[A paper read by Mrs. E. E. Winchip before the Domestic Science Club.]

IT has been said that chemistry enough to keep the pot boiling, and geography enough to know the different rooms in a house, was science enough for any woman. Byron professed that he would limit a woman's library to a Bible and a cooking book. But we are thankful that those days are not our days, and that the art of living has a place among the fine arts. It extends to all of the economies of the household, selects wholesome food and knows how to cook it; for true it is, that good living helps high thinking, and good cooking helps the conscience. Woman was not meant to be an unthinking drudge; the responsible duties that she is called upon to perform require a cultivated head, as well as willing hands.

Housekeeping is not more important than home-keeping, which is so often forgotten in the everyday routine of work. We think that we are doing our duty by keeping perfect order, and working in one particular rut from morning till night. That is not living, but drudgery.

It is said the animals, both brute and human, are living machines capable of doing work. The power of the engine to do its work comes from the consumption of fuel; the same is true of the human body. Its power comes from the consumption of fuel in the form of food. While the engine cannot convert more than one-eighth of its available energy into work, and stops when the fuel gives out, the animal may yield as much as one-fifth, and will continue to work for a long time after the supply of food is withheld. The animal is more than a machine; it not only requires food to work, but food to exist.

Then, how very important it is that the person in charge of the table should know the true value of the different foods; there must be enough of the tissue-building substance to make up for the wear and tear of body, and a sufficient quantity of the energy and heat-producing foods. It is thought that fat used in a digestible form is necessary for brain workers.

Americans are the most energetic of people, and work beyond their strength. It is as essential to economize one's strength as it is to furnish proper food to strengthen the body. If we take a small family of four persons, there are many ways to lighten the work. If they wish to furnish all of their own meals and have their work as light as possible, each one



must perform a certain portion of the work. Children should be taught—boys as well as the girls—how to purchase meats as well as groceries; they should learn to know a good article and the quantity required for a certain number of persons. The boy thus taught in early years, when he grows to be a man and has a home of his own, will know the proper quantity of beefsteak to purchase for a dinner, and will not send up pounds of nutmegs instead of ounces. Teaching a boy certain household duties will make him realize the amount of work there is in the home, and he will be more careful to save steps.

The matter of the selection of foods for the meals which are to give strength and power to work, lies in the hands of the housemother. She must know what foods are needed to furnish the full quota of life-giving substances. If this selection were left to each member of the family, there might be very strange mixtures for meals.

Fruit in its natural state is much better than it can be made by mixing it with rich pastry; it can be used and enjoyed in its season, requiring no labor to prepare. It has been proved that a four-course dinner for four can be furnished for a dollar or less, and as dainty and choice as an epicure might wish; but for half that amount, one can furnish good, substantial, and nourishing diet.

Four young ladies in our College, two as students, one as assistant in the department of domestic science, the other taking special work as a post-graduate in domestic science, gave me their experience of three months.

They had everything that they wished for their table and did not restrict themselves to things that were cheap. They had a good breakfast, lunch at noon, dinner at night; rented three furnished rooms, and kept two fires. The cost of their living including fuel and lights, averaged \$1.41 a week each; their rent was \$10 a month.

Other students have lived for less, but these young ladies lived more as the average family would wish to live.

Another family of four, two young ladies and two brothers of one of the ladies, students in our College, have been here three years, and the cost of their living, including their rent, which has been \$7 or \$8 a month, has averaged \$1.50 a week each. We can find many others living for less, but this is about the average expense of those that have kept account of the actual cost of living.

In some places you can find those who are making bread, cake, and pies—trying to support their families in that way. When one can purchase the "real home-made kind," it lightens the work very much. Many enjoy taking their dinner out, getting their own breakfast and supper, but to me there is no way where we can have the same enjoyment that we can have at our own family table; and to lighten the work is the need of today. If you make out a menu for each day, you can often prepare the things for two meals as well as for one while you are in the kitchen. It is a false idea that the best meals are those that are made out of materials fresh from the butcher and grocer, for some of the most dainty and nourishing dishes are those made from "the left-overs." If there be a roast or chicken for dinner today, one can have for another meal croquettes, or a nice meat pie; or even the much ridiculed hash is not to be despised, served on toast, or as plain hash.

Let me give you a history of one piece of meat costing twenty cents. It was the shin bone—one with the fleshy part of meat—boiled, making a good soup; then slices of cold, boiled beef; a meat escalop; a shin stew; a dainty dish of hash served on toast. These different dishes all served for a family of four. Cooking food properly, knowing just how to season it, and just how to serve it, is of great importance, for the most expensive cuts of meat are often spoiled in cooking. Our daughters should be educated in this art as well as in the other so-called fine arts.

The following menu for one week (given me by the four young ladies) provided breakfast and dinner, the lunch at noon being furnished from what they had left from the other meals:—

#### SUNDAY.

##### BREAKFAST.

Fried Mush. Soft Boiled Eggs.  
Bread and Butter. Stewed Apricots. Coffee.

##### DINNER.

Roast Beef, with Dressing. Browned Potatoes, with Gravy.  
Tomatoes. Celery.  
Bread and Butter. Bread Pudding.

#### MONDAY.

##### BREAKFAST.

Fried Apples. Buttered Toast.  
Fried Potatoes. Coffee.

Soup, Vegetable. Cold Slaw. Bread and Butter. DINNER. Crackers. Peaches. Sliced Boiled Beef. Cracknells. Tea.

#### TUESDAY.

##### BREAKFAST.

Meat Escalop. Farinose, with Milk and Sugar. Bread and Butter. Coffee.

##### DINNER.

Beefsteak. Fried Potatoes. Lima Beans.  
Cake. Baking Powder Biscuits and Butter. Tea.

#### WEDNESDAY.

##### BREAKFAST.

Griddle Cakes. Fried Eggs. Bread and Butter. Coffee.

##### DINNER.

Shin Stew. Creamed Potatoes. Pickles.  
Bread and Butter. Apple Pie. Graham Wafers. Tea.

#### THURSDAY.

##### BREAKFAST.

Hash on Toast. Coffee. Hot Biscuits and Honey.

##### DINNER.

Frizzled Beef. Corn. Mashed Potatoes.  
Bread and Butter. Steamed Suet Pudding, with Sour Sauce. Crackers. Tea.

#### FRIDAY.

##### BREAKFAST.

French Toast. Maple Syrup. Toasted Cheese. Bread and Butter. Omelet. Coffee.

##### DINNER.

Pork Chops. Hot Rolls and Butter. Sweet Potatoes.  
Coffee. Jelly, with Whipped Cream. Tea.

#### SATURDAY.

##### BREAKFAST.

Fried Potatoes. Fried Farinose. Hot Biscuits and Butter. Apple Jelly. Coffee.

##### DINNER.

Oysters Escalop. Celery. Olives.  
Bread and Butter. Tea. Orange Shortcake.

### The Farm as a Home.

I frequently receive letters and sometimes visits from men who have accumulated modest fortunes as merchants or manufacturers, but who love country life and wish my advice as to whether or not they had better buy a farm and depend on it for support. These men want the freedom from care which they hope to find on a farm, but are totally without experience as farmers. Such men usually make a fatal mistake if they put all their means into a farm and depend on it for the support of their families. I would never advise this unless the man had been raised on a farm and had gained some experience in early life which he could bring back with him to the farm.

I have in mind now a sad case of a successful merchant of Cincinnati who, ten years or more ago, bought a farm of some 2,000 acres, investing about \$20,000 in it. His family was accustomed to luxuries and to living in good style, and neither they nor he realized that the income of the farm would not be sufficient for this. In fact, the net income of the farm was next to nothing, for the man knew nothing, and had to hire all his work done, and that by men whose only interest was to put in their time and get their pay. He also made large expenditures in buildings and various improvements until his surplus capital was about all gone. In a few years he found himself hopelessly in debt, and awoke to the fact that he could not make any thing from the farm. Finally, debts began to press and the farm was sold, and it brought about one-third of what he had paid for it, and when his debts were paid there was little left. This was about three years ago, and I met an old neighbor of his a few days since, who told me that all his property was gone, and that the once prosperous merchant was now supported by a son who had entered the ministry.

I should lay it down as a rule that the man who tries to farm on a large scale with all or most of his means invested, and who has had no training in that line, will make a failure of it nine times out of ten. Is there, then, no way in which a man can enjoy the pleasures of farm life without running the risk of failure? I believe there is. And the way for him to buy a small farm and keep most of his means invested where it will bring an income. One can farm on ten acres just as truly and far more pleasantly than on a large farm. If the man to whom I have referred had bought ten acres of land and invested his remaining capital he would have had a cash income outside of his little farm, and as he would have had a home and a large part of his living from his little farm, his future would have been secure.

A farm of ten acres can be made to produce all or most things a large family need, and can be run at small expense. To begin with, a driving horse and two cows can be kept on it at small expense, and the horse will give a world of pleasure to the family, while the cows, if so managed that one is fresh in the spring and the other the fall, will furnish milk and cream in abundance, and ought in addition to furnish all the butter needed. Then a quarter of an acre of poultry-yard stocked with forty or fifty hens will give eggs and chickens in abundance, and a few tur-

keys for Thanksgiving and the holidays. An acre in garden and small fruit will furnish vegetables and fruits sufficient for the family wants, so that there will be a constant succession from the time asparagus comes in April until winter sets in, and then the cellar will be stocked with canned fruits and vegetables to last you the winter. Allowing two acres of land for pasture, one for garden and truck patch which includes small fruits, and half an acre for ornamental grounds around the house, we have six and a half acres left to cultivate.

There are many ways in which such a farm can be run so as to give a fair profit on the investment, but the greatest profit and satisfaction will be found in so managing it that the family will get a great variety from it, and the table never be without home-grown products. The rent of a comfortable house in a good neighborhood in a city would probably cost the interest on twice as large a sum as one would need to invest in a ten-acre farm with good buildings and conveniences. Be careful about locating wisely. Remember that you have been accustomed to getting your daily paper promptly, to hearing from the post-office twice a day or oftener, and neither you nor your family will be contented on a mud road, remote from railroad and postoffice. Buy only good land; if you are not a judge, get some experienced farmer in whom you have confidence to help you select your future home. Locate on a good road, not more than ten minutes' drive from a good live town. Keep the larger part of your means safely invested where it will bring an income outside of your farming, and you may enjoy all the pleasures of country life with little risk or worry.—*New York Tribune.*

### Successful Farming.

The past fifty years in the life of this country, in the development of its scientific and mechanical work, has no parallel in man's existence. Go to the great centers of commerce, behold this immense network of railroads, consider all these stupendous mills and machinery, and do you wonder that the imagination of the rising generation is aroused? Do you wonder that these quiet, unpretending, non-progressive homes that have stood unmoved these fifty years are disturbed, disquieted, finally abandoned?

No man has the ability to conduct mixed husbandry with a tolerable degree of success; no ordinary farmer, with himself and the help usually kept on our farms, has either the physical or the mental ability to succeed by the methods now in practice. You are all familiar with the methods by which large manufacturing establishments are conducted. Every man has his particular line of work, and as he becomes familiar with it, the best results are obtained.

The lines of competition are being drawn tighter and tighter, and the farmer who desires to achieve financial success must conduct his business upon a basis approximating somewhat to the principles upon which other industries are conducted.

The farmer is, to a large extent, a manufacturer, but he must not attempt the manufacturing of too many kinds of goods at the same time. He has to deal with animal and vegetable life, with all the mysteries that enter into the composition of the soil, the action of light and heat, the ever-varying seasons—in fact, he is in Nature's marvellous laboratory, surrounded by forces and mysteries, in a measure beyond the comprehension of ordinary mortals. Imagine a farmer with \$10,000 invested in a well-regulated farm, with flocks and herds, fruits, vegetables, and grasses. He is standing in the midst of all these, ministering to their various needs and conditions, and out of all this wonderful mechanism he is to produce the food to support himself.

Turn now to the \$10,000 manufacturer, perhaps engaged in making doors and sash carriages or some line of goods. Which of these two men needs the most brain power to be successful?

If it is all one man is capable of to follow one profession, or one line of work in the mechanical world, what think you of the farmer who attempts to master all kinds of work involved in mixed farming?

When we contemplate the tendency of the times, we can arrive at no other conclusion than that the future farmer must follow out some line of work to its greatest perfection. Market producing as a specialty has become a profitable industry. The ordinary farmer cannot compete, and should not raise more than enough for home consumption.

The raising of milk can only be successful as one adapts his crops to this line, selects animals that are best adapted to the production of milk, and feeds so as to obtain the best results at the least cost. It is easy to breed and so manage a dairy as to produce from 200 to 250 pounds of butter annually. The difference between a cow that produces less than 100 pounds and one that produces 225 pounds is the difference between ruin and success. But the difference in value between 100 pounds of inferior butter and 225 pounds of a superior article carries the comparison a great way further.

Such fearful odds exist in no other industry, and it is a shame and a disgrace to the farmer that when so much knowledge can be obtained concerning a single branch of his labor he will allow such a discrepancy to exist.—*J. M. Connor, before the Vermont Dairy-men's Association.*

The day has passed into oblivion when a farmer is measured by the superior feats that he can perform, such as how many acres of grass have fallen before his scythe today, the field of corn that has received his attention, the tons of hay yielding to his giant-like strength. This is a day of brains. The question is, "What is the strength of his brains, rather than the capacity of his muscle?"—*Committee on Education, Maine State Grange.*



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds a. par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Several cases of mumps have developed in the past two weeks.

Secy. Graham was unable to reach Hutchinson for the Farmers' Institute, last week, on account of the blockade.

The Farmers' Institute at Oak Grange, Shawnee County, postponed a week ago on account of cold weather, will be held March 6th and 7th.

Woll's Dairy Calendar for 1895 mentions Prof. Georgeson's book, "The Dairy Industry of Denmark," as "one of the more important works" on dairying.

Although the College takes no part, a considerable body of students plan to attend the State Oratorical Contest at Topeka, Friday evening. They go in a special car.

President Fairchild was called to Topeka for several days this week. His place on the program of the Clay Center Farmers' Institute was taken by Secy. Graham.

The steam fitters of the Mechanical Department have been busy for almost a week making repairs in the Armory, where the pipes froze from top to bottom during the cold snap.

Mid-term examinations created the customary mild excitement of such occasions, and, as usual, enabled some students to discover their weak spots—in time, let us hope, for repair before another test is made.

Prof. Brown drills a large chorus for the Episcopal ladies' concert, and a great host of students take part in both chorus and orchestra. The concert is to be held at the Opera House, Tuesday evening, February 26th.

Manhattan people were most agreeably surprised yesterday by the appointment of Mr. S. M. Fox as Adjutant General of Kansas. The appointment probably receives the approval of all, regardless of politics.

The second volume of Class Letters from the members of '92 is just from the press. It is as breezy a collection of papers as were ever enclosed between covers; and, what is truly remarkable, every member of the class is represented.

Farmers constitute a large majority of the Legislature. If they know when they are well off, they will see that the Agricultural College is provided for liberally. Under President Fairchild it is doing a splendid work for Kansas agriculture and for the students enrolled. Keep it up.—*Abilene Reflector*.

The College Orchestra for the Winter Term is composed of the following students: R. H. Brown, E. L. Brockway, R. W. Clothier, Lula Daniels, P. Fox, G. W. Fryhofer, J. J. Fryhofer, Marian Gilkerson, C. M. Ginter, Lorena Helder, T. L. Jones, H. G. Johnson, C. Lyman, Hilda Leicester, F. Markley, J. Poole, C. C. Rambo, Grace Secest.

The boys in the Iron Shops have owed Foreman Brooks a grudge ever since he—scheming man—persuaded them not to charivari him on his return from Ottawa a benedict, a month or so since; and Tuesday evening they proceeded to satisfy it by presenting their victim with an easy reading chair. A man who can dissuade a determined charivari crowd from carrying out its designs, and furthermore induce that same crowd to make him a handsome present, will surely get on in the world!

Our State Agricultural College is the one public institution in Kansas which is modest in its asking at the hands of the Legislature. Indeed, its conservatism is often mistaken for lack of appreciation of its opportunities. Its officers never ask for more than the most reasonable enlargements and extensions to enable it to do the work which is pressing to be done. Just now the growth of the institution creates a pressing demand for more farm land and for a building for the Domestic Science Department. If Kansas legislators could fully acquaint themselves with the work as it is done and with the needs at Manhattan, the moderate requests made to meet the demands of growth would need no further urging.—*Kansas Farmer*.

In another column will be found a reprint from the *INDUSTRIALIST*—the college paper printed and published and edited by the Kansas Agricultural College at Manhattan, an article in its issue of January 19th from the pen of Miss Alice Rupp, instructor in English, styled "Stick-to-itiveness," which should attract the attention of all young men and women about to start out into life, as well as the thoughtful consideration of parents. We cannot have any too much of that kind of education; with other acquirements, instilled into the minds of the coming generation. There is merit and the ring of true wom-

anhood in the article which goes to make manly men and womanly women, for it is applicable to both in the present existing conditions of life. The State of Kansas may well be proud of the Manhattan institution.—*Kansas City Stockman*.

The recent article on student life at Manhattan, Kan., by a student of the Kansas State Agricultural College, contained a passage very pleasing to the editors of the wide-awake *Aggie Life*, published at the Massachusetts Agricultural College. The fact that rushes and hazing are unknown at Manhattan forms the text of an excellent editorial in this paper. "A college which can show such a clean record as the Kansas State Agricultural College is certainly to be congratulated," says *Aggie Life*.—*American Agriculturist*.

The College Cadet Band furnishes some good music now-a-days. In addition to Professors Brown and Walters, there are eighteen members, as follows: G. B. Norris, piccolo; C. C. Rambo, solo B-flat cornet; R. H. Brown, solo B-flat cornet; E. L. Brockway, first B-flat cornet; R. R. Keely, first B-flat cornet; H. F. Hatch, second B-flat cornet; G. C. Wheeler, second B-flat cornet; G. L. Lechner, second B-flat cornet; J. M. Wheeler, solo E-flat alto; J. J. Johnson, first E-flat alto; T. L. Jones, second E-flat alto; A. Smith, first B-flat trombone; A. L. Peter, first B-flat tenor; W. I. Joss, second B-flat tenor; H. G. Johnson, B-flat baritone; C. Lyman, E-flat tuba; F. Markley, snare drum; A. S. Berry, bass drum.

## GRADUATES AND FORMER STUDENTS.

I. Jones, '94, teaching the home school near Tescott, found time to visit the Hamilton Annual and renew acquaintance with College friends.

Mr. Breese received the sad news this week of the death, from blood poisoning, of his cousin, Mrs. Gracie Pope-Wood, of Elmdale, Third year in 1880-81.

W. S. Arbuthnot, '91, is located at Republic, Kansas, as a full-fledged druggist, having recently passed the examination of the State Board of Pharmacy. He reports a good trade and increasing bright prospects.

"Keep moving" seems to be the motto of Albert Dickens, '93, if the following from the education column he edits for the *Bushton Star* may be taken as a criterion: "We ought never to get the idea that our education is finished. There is necessarily a limit to our school days, but that is no reason why we should retire from educational work. A short time spent in self-improvement each day will accomplish a great deal in the course of a year. Select something that interests you, natural history, botany, philosophy; even the more common subjects may be interesting. A few minutes work in mental arithmetic might make a pleasing change in the day's work, a chapter of ancient or modern history, geology or political economy would furnish food for thought and make the reader both happier and wiser."

Gov. Morton of New York seems to appreciate the thorough agricultural training secured by the young men of the Kansas Agricultural College, as his large dairy farm on the Hudson is superintended by H. M. Cottrell, who graduated here in '84. He is assisted by J. F. Odle, '94, and J. E. Dorman, Second-year in 1890-91. The dairy department is superintended by W. W. Robinson, Second-year in 1889-90. The milk from Ellerslie Dairy is pure Guernsey from cows especially selected for the richness of their milk, and is said to be the richest produced in New York. Every known means is used to secure pure, rich, healthful milk—absolute cleanliness, the best feeds, care, light and ventilation, and regular veterinary inspection. The milk is aerated as soon as drawn from the cows with pure air under pressure, which removes every trace of animal odor, and is immediately cooled below 50° and put into sealed glass bottles. It is marketed in New York City.

Mary E. Cottrell, '94, writes for the *Wamego Agriculturist* an interesting description of Ellerslie, Gov. Morton's farm at Rhinecliff-on-the-Hudson, from which the following paragraph is taken: "Three young men from the Kansas State Agricultural College have proved efficient helpers at Ellerslie—Messrs. J. E. Dorman, W. W. Robinson, and J. F. Odle. A few months ago a lady drove up to the great barn at Ellerslie and requested to see the Superintendent. She was the owner of a farm among the Catskill mountains and desired to engage the services of a young man who would be capable of managing a dairy and poultry farm. She would be satisfied with no one who was not from Kansas, or had not received part of his training at the Kansas State Agricultural College. Could Supt. Cottrell recommend just the man for the position? He could and he did. At present J. E. Dorman, well known to many readers of the *Agriculturist*, is able to satisfy the numerous demands of the situation."

Editor W. C. Moore, '88, who is conducting one of the best weekly papers in Kansas, has this to say in his *Junction City Union* of the success of one of his classmates: "Kansas was honored with a place in the trio of Yale's young orators that contested with Harvard for oratorical honors. The representative was Mr. Clement G. Clarke, a Riley county boy who graduated at the Kansas State Agricultural College in 1888, and who has since been at Yale as a literary student, studying with a view to entering the ministry. The Associated Press referred to Clarke as "one of the most brilliant literary students at Yale." Clarke is one of the brainiest young men Kansas ever produced. There is one pleasant reflection that comes up in this connection. When once into the work of the ministry, the ranks of the profession will be made richer by one more young man whose soul and every energy will be devoted to carrying out the dreams of his boyhood days. We know Clement G. Clarke. He is as true

as steel, and is blessed with a wife whose presence and encouragement will be to him a tower of perpetual strength. And he, too, is another alumnus of the great Kansas college for the sons and daughters of farmers. To the credit of his Alma Mater it may be said that his earlier collegiate discipline has proved to be a sufficiently broad foundation."

## A Successful Lecture Course.

During the past two weeks, thirty-five lectures on various subjects have been delivered by members of the Faculty and prominent men from abroad. The Course has been well attended throughout. There were quite a number of persons from distant parts of the State in attendance, but not so many from outside of Riley county as there should have been. Many of the papers read caused interesting discussions which took the form of experience meetings in which the facts observed by men from different localities were compared. The number in attendance reached nearly seventy; but this does not show the numbers reached by the lectures, as many students who are in College for the winter term only attended every lecture they could. It was noticeable that but few advanced students "dropped in." This fact is easily explained when it is known that the lectures by the different professors were presented in popular form, and boiled down so that they could give in a few lectures the best of what they give to their classes in a term. The general opinion of those in attendance was that it paid them well. One man said that he had learned enough by one lecture to amply repay him for the time and expense of attending.

Hon. C. B. Hoffman's lecture on "Farmers' Wives" was given in Chapel in the morning on account of the inclemency of the weather at the advertised time. He discussed eloquently the influence of the wives in the advancement of the race. Hon. T. M. Potter, of Peabody, gave a very popular address on "Our Heritage," in which he eulogized the great State of Kansas and its laws, which are the heritage of the present generation. Judge Emery ably presented the claims of the arid regions of the United States. He showed that the arid region includes one-half of the country, and that if only one-tenth of it is irrigated it will support a population of 75,000,000. The "Dairy Cow" as described by A. E. Jones of Topeka, excited much discussion, and those who heard it were well-paid for attending. Hon. W. J. Bailey presented the subject of "The Practical Value of Education to the Farmer" in which he endorsed heartily the Agricultural Colleges of the country and emphasized the idea of "learning and labor" going together.

J. E. PAYNE.

Those who did not attend the lecture last evening by Hon. W. J. Bailey, on "The Practical Value of an Education to the Farmer," missed a rare treat. Mr. Bailey is one of those broad-gauge men who think that money getting is not the sole "practical" object in a farmer's life. A graduate of Illinois University, and a successful farmer of Nemaha county, he is himself a notable example of what an educated farmer can be,—a man of influence in his neighborhood, county and State, on the various topics of life requiring clear thinking; a writer of elegant yet clear-cut, forceful English, and an eloquent, persuasive speaker. His lecture should have been heard by every student and by as many others as possible. By the unanimous vote of the audience present, he was requested to furnish it to the *INDUSTRIALIST* for publication.

J. T. W.

## COLLEGE ORGANIZATIONS.

*Student Editors*—T. W. Morse, G. W. Fryhofer, Maud E. Kennett.

*Hamilton Society*.—President, C. A. Johnson; Vice-President, W. I. Joss; Recording Secretary, C. E. Pincomb; Corresponding Secretary, W. L. Hall; Treasurer, M. L. Heckert; Critic, B. W. Conrad; Marshal, A. W. Staver; Board of Directors, R. J. Barnett, C. S. Marty, G. C. Hall, J. Poole, L. G. Hepworth. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

*Alpha Beta Society*.—President, J. B. S. Norton; Vice-President, Gertrude Havens; Recording Secretary, R. W. Rader; Corresponding Secretary, Nora Fryhofer; Treasurer, A. C. Havens; Critic, A. E. Ridenour; Marshal, E. P. Smith; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

*Ionian Society*.—President, Ethel Patten; Vice-President, Ada Rice; Recording Secretary, Gertrude Stamp; Corresponding Secretary, Myrtle Hood; Treasurer, Emma Finley; Marshal, Hope Brady; Critic, Dora Thompson; Board of Directors, Laura McKeen, Flora Day, Mabel Selby. Meets on Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

*Webster Society*.—President, T. W. Morse; Vice-President, F. E. Rader; Recording Secretary, J. B. Dorman; Corresponding Secretary, E. G. Gibson; Treasurer, W. B. Chase; Critic, W. H. Steuart; Marshal, J. R. Henrey; Board of Directors, G. C. Wheeler, C. D. McCauley, F. E. Uhl, F. R. Jolly, E. B. Patten. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

February 9th.

Pres. Morse called the Websters to order at 7:30. B. F. S. Royer led in prayer. E. M. Frowe and L. A. Nelson became members. The question, "Resolved, that a normal course of one year be added to the College—being optional, and graduates receive State certificates," was argued affirmatively by S. A. McDowell and E. H. Freeman; negatively, by C. M. Pape and S. B. Newell. The affirmative argued: "Had we a normal course here, the graduates would not have to go to the State Normal to prepare for teaching. It would give additional training to those that teach and can't attend the Normal. The additional expense would be small for the great benefit." The negative held that the Agricultural College was founded for agriculture, and the normal course would be out of the line. All studies taken here should be necessary to practical agriculture. Graduates take teaching but few years for financial benefits. The



decision was given to the negative. H. E. Moore gave an instructive essay entitled, "Nervousness Peculiar to Americans." H. J. Robinson gave the humorous declamation, "Usefulness Obsolete." Webster quartette furnished music. C. Farman in his "Duck Farming" gave, humorously, some experiments and mishaps relating to duck culture in an artesian well district. The original song, "The Hamilton Black Quartet," was based on facts rather than music and poetry. L. E. Potter discussed "Missouri State;" and the discussion was taken up energetically by members that had kith and kin within her borders.

E. G. G.

February 8th.

A quartette by the Misses Palmer and Messrs. Smith and Clothier opened the Alpha Beta program. J. M. Westgate led in devotion, after which two candidates were admitted to membership. Mr. Henley made his first appearance before the Society with a declamation entitled "Snyder and the Tomatoes." Mr. Graves gave a declamation, "The Cowboy Poet." The organ solo by T. L. Jones was enjoyed by all. The question, "Resolved, that prizes should not be offered in schools," was discussed in a very interesting manner by R. W. Rader and Grace Secrest on the affirmative and M. A. Limbocker and A. C. Peck on the negative. The affirmative stated that other prizes are offered for something for which all are not capable of working; also that dishonest means were often used to secure the prize; reference was made to the member of the State Oratorical Contest who plagiarized. The speakers on the negative believed that the offering of a prize would be a stimulus to work, and many would be led to success in that way. The mandolin and guitar club then favored the Society with one of its selections. A well-written edition of the Gleaner was read by Marian Gilkerson. After recess Misses Elva and Inez Palmer sang a duet accompanied by the guitar. Elsie Waters gave an extemporaneous talk on "Mr. Worth, the Fashion Leader." The Society also listened to a few words from a former member of the Society, Mrs. Hutto, and Prof. Popenoe. The transaction of business occupied considerable time, after which the Society adjourned.

N. F.

February 9th.

The Hamilton Society was called to order at 7:30 o'clock by President Johnson. Devotion was by F. A. Dawley. In the absence of the Recording Secretary, Wm. Anderson was appointed to fill the vacancy. A. D. Coe appeared first on the programme, with the Mariner's Dream for a declamation. "Should hypnotism be prohibited?" was the question for debate. The affirmative was presented by W. L. Hall and E. Emrick; the negative, by H. G. Johnson and C. P. King. Decision favored the affirmative. E. M. Haise enumerated some of the notable happenings of the week. C. K. Peck discussed in an entertaining way the social and political conditions of the Indian Territory. In an essay on the "Hills of Manhattan," W. R. Correll gave some pointers on methods of reaching tops of aforesaid hills. He then told us of hills we must daily mount if we would pass on to success. Just as the Society was getting down to business, the papier mache band, par excellence, appeared on the scene with unmistakable signs that they were ready to discourse music, which soon floated forth in notes both fine and coarse, interspersed with a complexity of noise. A very lively and interesting business session followed the program. During the evening the Society was honored by a number of visitors, principally ladies of the Ionian Society.

W. L. H.

February 8th.

The Ionian Society was called to order at the usual time by President Patten. The Society joined in singing, after which Mary Wilkin led in devotion, followed by roll call. Ina Holroyd was initiated. In the absence of the critic, Daisy Day was appointed to take her place. The program opened with an excellent piano solo by Fannie Hacker. The question, "Is solitude better for moral and mental improvement than society?" was debated on the affirmative by Cora Stump and Mabel Cotton, and on the negative by Elsie Crump and Maggie Correll. The judges, Mrs. Maud Parker-Hutto, Miss Nora Newell, and Miss Etta Smith, decided in favor of the negative. We next listened to a vocal solo by one that the Society is always pleased to hear, Emelia Pfeutze. The Oracle, having for its motto "Take care lest ye come entangled in the Webs," was read by its editor, Gertrude Lyman. The motto was certainly well carried out in the editorial. The Society was next favored with an instrumental trio on the mandolin, guitar, and banjo by the Misses Walters and Cotton. The program closed with quotations from various members of the Faculty. The names of Etta Smith, Clara Nowell, and Stella St. John were proposed for membership.

M. H. H.

#### FARMERS' INSTITUTES.

Held Under the Auspices of the Agricultural College.

Institutes will be held at the places and dates as stated below, and the College will be represented at these institutes by the members of the Faculty named:—

Haven, Reno County, February 21 and 22; Professor Mayo and Mr. Burtis appointed.

Cherryvale, Montgomery County, February 21 and 22; Professors Popenoe and Georgeson appointed.

Washington, Washington County, February 28 and March 1; Professors Walters and Mason appointed.

WaKeeney, Trego County, March 1 and 2; Professors Georgeson and Graham appointed.

#### Superiority of Currell Wheat.

Prof. R. C. Kedzie of Michigan has made an extensive study of the prominent wheats of this country for a paper read before the Michigan Millers' Association. We clip from the paper as published in the *Northwestern Miller* an item of special interest in Kansas, where the Currell wheat has been so extensively cultivated from seed distributed from the Kansas State Agricultural College:—

"The Currell is a red wheat. It is said to have originated in Virginia. It is 'the brag wheat of Kansas,' both for quality and productiveness, yielding nearly 40 bus. per acre. Professor Georgeson, of the Kansas Agricultural College, speaks in high terms of the Currell. He generously furnished our College with a specimen of the flour and wheat for seed, and two acres have been sown on the college farm with this wheat. The berry is small, but hard and flinty, and, though a dark red wheat, it makes a fine white flour, as you see from the specimen on the table. In many respects, it resembles the Hungarian wheat from Budapest. It is very rich in albuminoids, containing 15½ percent of crude protein, while the Hungarian has 13½. If the Currell proves to be well adapted to our soil and climate, it is by far the most prominent red winter wheat now before the public. The results of the trial of this wheat on the college farm will be watched with interest. Professor Georgeson, in bringing this wheat prominently before the farmers, has done a good work for American agriculture.

"The chemical analyses of these wheats, presented in the following table will furnish means for direct comparison of the different varieties:—

RED WHEATS.	Mixture.	Ash.	Fat.	Woody fibre.	Starch, sugar, gums, etc.	Protein.	No. of kernels to weigh 10 grains.
Reliable.....	12.80	1.85	1.74	2.37	67.99	13.25	275
Rudy.....	12.95	1.99	1.58	2.00	69.92	11.56	210
American Bronze.....	13.17	2.05	1.85	2.22	68.90	11.81	265
Jones' Winter Fife.....	13.15	1.75	1.77	2.27	68.50	12.50	306
Red Clawson.....	13.20	1.84	1.82	2.50	70.20	10.44	228
Currell, Kansas.....	11.55	2.51	2.06	2.85	65.53	15.50	336
Hungarian, imported.....	10.97	2.23	1.56	1.84	69.90	13.50	301
Hungarian, Michigan.....	13.10	2.09	1.63	1.82	68.18	13.18	250
HUNGARIAN-WATER-FREE.							
Hungarian, imported.....		2.50	1.75	2.09	78.49	15.17	339
Hungarian, Michigan.....		2.40	1.87	2.09	78.48	15.16	285
WHITE WHEATS.							
Landreth, Nebraska.....	10.75	2.97	1.97	2.13	71.24	10.94	....
Dawson's Golden Chaff Canada.....	12.84	1.92	2.09	2.00	70.96	10.19	262

#### Women and Good Roads.

Was ever a reform agitated and moved forward to success in which women were not either the leaders or else that "power behind the throne" which steadily and quietly incited the aggressive ones, helping on to victory? So in the present movement, or rather feeling, pervading the entire country concerning good roads, women must help if the sentiment being manifested is ever to culminate into any decided action that will prove advantageous. Usually we leave road making and kindred things entirely to the men. What is the result? In what condition are our roads?

While there is not a woman in the land that is not more or less affected by the condition of the roads, those residing in rural districts and small towns are the ones most interested, and to such especially is this little article written, in the hope of causing them to think on the subject, and to decide what their responsibility in the matter is.

While women cannot go onto the road and work with shovel and grader, they can do effective work in other ways. They can think and plan for others to execute, which is, after all, the highest kind of generalship. They can by united effort so use their influence that only the best-posted men shall be elected for road supervisors. They can agitate the subject at home and abroad, helping father, husband, brothers, and neighbors to see what is needed in making better roads. They can have the question discussed in the public schools, thus interesting even the children and teaching them to think and plan for improvement. They can bring it before the institute and Alliance, the literary and debating clubs, as well as women's clubs.

Who has not had his business or social plans sadly marred or entirely ruined by bad roads? While in remote districts more than one life has gone out, more than one soul passed over into the mysterious beyond, because bad roads prevented obtaining medical aid.

Many of our readers know what it means to be debarred from church or social privileges for weeks at a time on account of bad roads, and more than one earnest, hard-working pastor knows that the low-spirited condition of his church is due as much to bad roads as to other causes. (Indeed, I don't know but road making might be incorporated into some practical sermon, and I am sure it might well come within the limits of home missionary discussions and work).

We have seen business lag; have had our children kept at home from school, all for nothing but bad roads. Now what shall we do about the matter? Surely as women we need to do some serious thinking on this subject; for usually with a woman to think is to plan, and to plan is to execute. Shall we have better roads?—Clara Everts, in *Farm, Field, and Fireside*.

#### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

#### MANHATTAN ADVERTISEMENTS.

##### BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

LESLIE SMITH. College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

##### DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

##### CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

KNOTSMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the student. Call without fail before buying.

##### WATCHES, JEWELRY.

J. Q. A. SHELLEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewels, and Gold Spectacles, also Musical Instruments.

##### DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

##### HARDWARE.

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##### DENTIST.

D. R. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

##### PHOTOGRAPHS.

D. EWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

##### LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

##### MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

##### SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting 50 cents. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

##### GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, has the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

##### PHYSICIANS.

INFIRMARY for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. SOLON D. ROSS, M. D., 523, 525, 527 P'tz Av.

#### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



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### POND FISH.

BY SECV. I. D. GRAHAM.

WITH the revival of interest in irrigation in Kansas has come a more than passing interest in other subjects which seem more or less directly associated with it. One of these matters of renewed interest is the building of artificial ponds for irrigation purposes and their utilization as "fish gardens" and ice factories.

The ambitious irrigator will first test his water supply, then throw up the necessary embankments and build his pond, and later, as he has occasion to think about the subject, will cast about him for some suitable fishes with which to stock his pond. Very likely he has known or has read about the trout and its many excellencies as a table fish, and of the high price it uniformly commands in the markets; and his first thought will be that, with plenty of pure well water with which to supply his pond, he may make of trout raising a success. He does not know, or fails to consider, that the trout is never a "dead water" fish and will not thrive in ponds; that while it is voracious enough, it is a very delicate feeder, whose natural food is not found in warm water ponds; and that the heat of a Kansas summer would probably prove disastrous in the first season.

With one exception, perhaps, the native fishes are the only ones, then, that may be depended upon to grow and multiply in the average irrigation pond. This one exception is the German carp, which, like the English sparrow, will live and thrive and multiply anywhere and under almost any conditions, and is of about as little value for human food. It has, however, a peculiar value to the pond owner for two reasons: In those sections of the State where the soil is a loose, sandy loam, and where newly made ponds must be "puddled," the carp is very useful. From its habits of feeding on the bottom of the pond and rooting in the mud, it makes an excellent puddler. Its second use will be found in its value, while young, as food for other and better fishes. For these two reasons it is well worth a place in every pond, though it has little else to recommend it. As a table fish it is not to be recommended. It is uniformly strong and "muddy" in flavor, and in other respects is much like the common buffalo fish. Of course it can be made palatable by a preliminary course of "treatment," and as it multiplies rapidly it has found favor with many who prefer quantity to quality in their daily rations. When it is considered that other and vastly superior native fishes can be grown in the same waters, with about the same amount of care, it seems hardly worth while to bother with the carp for other than the reasons noted above.

Of the native fishes, the two great families to which belong the sunfish and the catfish will be found to contain more members suitable for the purpose in hand than any others. Of the sunfishes, we would place at the head of the list the two black basses. The small-mouthed black bass is peculiarly a stream fish, and a very active one. It exceeds the trout in value, as it does in distribution, and may be found to adapt itself readily to life in a pond, provided the water supply is plentiful and pure and the pond has been long enough in existence to admit of a considerable vegetable growth in it. The large-mouthed black bass, or bayou bass, is a pond fish by preference and is much more sluggish in its nature than the small-mouthed variety. It is an equally desirable pan fish, and attains a much larger growth than does the former. The writer would place it at the head of the list of desirable pond fishes.

Perhaps the next member in value of this great family of sunfishes would be the croppie, which also travels under the several names of batchelor, bride perch, strawberry perch, chinquapin perch, new light, and sac-a-lai. This fish is a pond fish from principle, and is a delicious pan fish, though it lacks much of the fighting qualities when on the hook that are so conspicuously present in the black basses. Croppies are of a sociable nature, and are always found in schools. They will bite anything in the way of bait from the artificial fly to the "wum," when they feel like it, and, all things considered, are perhaps the most valuable pond fishes in the list.

The grass bass, calico bass, fin mouth, bitter head, bar fish, or sand perch—for he is known by all these names—is much like the croppie in all the essential qualities of a pond fish, and is equally to be recommended if we except the fact that it does not multiply so rapidly.

The rock bass, goggle eye, red eye, or lake bass is

a well known and deservedly popular pond fish. It has all the game qualities of the black bass and is fully its equal as a pan fish, but as it does not grow so large as either of the species previously named it has not found the same favor with fish culturists. It is an excellent fish, and very desirable for pond culture.

Almost any other of the members of the sunfish family can be raised in ponds, with the possible exception of the so-called pike, or jack salmon. This fish is of a royal family, and is about as much named as are members of certain other royal families, wall-eyed pike, glass eye, dory, salmon, pike perch, okow, hornfish, green pike, yellow pike, and jack being some of its other names. While a most excellent fish, it is less to be recommended than the others already named.

Of the catfishes, one may have his choice. They will all do well in ponds if the conditions of food, etc., are present, the blue, white, silver, channel, or fork-tailed catfish being of course the best of the lot. This is a really desirable fish, and possesses many of the qualities which serve to distinguish a true game fish. Although a bottom feeder, it is a rather quick biter and is a hard fighter when hooked. If it be taken from fairly pure water, it has an excellent flavor, and is altogether a most desirable pond fish. As the catfishes are generally bottom feeders, they will rank alongside the carp for their puddling abilities, and will enjoy living with them for gastronomic reasons.

But to make a "dead sure thing" of raising fish in a pond there is nothing that will surpass the common bull head for a starter. He will live in any kind of water that is thin enough to enable him to work his gills and is exceedingly democratic in his instincts. It is never necessary to tempt his appetite with dainties nor to use expensive tackle with which to lure him from his home in the mud. A chunk of liver that is rather "high," a common fish hook, and a "pole" cut from the adjacent "bresh" are all the capital needed for a days sport with the bull head. Or, if time presses and the sport of fishing is beyond reach through pressure of business, the hunger for a fish dinner may be easily satisfied by simply baiting the hook with a chunk of liver and tying the line to a limb. When you come in from the field the bull head will be found to have swallowed the bait and hook some hours ago and to be lying in the mud thinking. He has a great head for grasping ideas and liver, and the fact that he is fastened by the treacherous line does not worry him in the least. He argues that if he can digest that chunk of liver before you "turn out" for dinner he will be just that much ahead.

There are only two things about a bull-head that are not to be commended, and these are the disagreeable habit he has of raising his "horns" (fin spines) when you are handling him and the necessity you are always under of splitting him wide open in order to regain your hook. His idea seems to be that liver tastes good all the way down, and he proceeds to put it where it will do him the most good. The bull-head does not have scales like his more aristocratic neighbors of the sunfish family, but he is covered by an India rubber hide which is at once a good protection to him and the despair of the good housewife who attempts to cook him. A plunge into hot water, however, serves to solve all the difficulties in the way of removing his jacket, and he is ready for the pan. The flesh of the bull-head is not equal to that of the trout or black bass; indeed, it is not ranked high in point of flavor by some folks, but it serves to fill the stomach very well and will add a variety to what might otherwise prove a monotonous bill of fare.

### ANIMAL DISEASES AND PUBLIC HEALTH.

BY PROF. N. S. MAYO, D. V. S.

WITHIN the past few years the intimate relation between the diseases of animals and those of human beings has been brought prominently before the public. This has been accomplished largely through the efforts of original investigators, who, in the study of various diseases to which human beings are subject, have tested or inoculated lower animals, and found that many diseases could be transmitted to them; and investigators of animal diseases that previously had not been thoroughly understood found that they were quite familiar human diseases, often changed so much that they have very little resemblance to each other,—caused by the difference in the animal organism. Yet the germs—the cause of the



disease—were identical in both human and animal subjects.

Some of the most common of the diseases which attack man and lower animals are consumption or tuberculosis, a disease which among certain varieties of cattle prevails to an alarming extent, and is said by good authorities to be the cause of death of one-eighth of the human race; glanders, a fatal and loathsome disease of horses, is also transmitted to man by inoculation, and is almost always fatal; anthrax, a disease which attacks almost all domestic animals, as well as man, rabies, or hydrophobia, when found in man, is almost always the result of inoculation by lower animals; erysipelas, tetanus, or lockjaw, blood poisoning, and many other diseases which are less common, but which can be transmitted from the lower animals to man, and vice versa.

To the diseases mentioned must be added the parasitic diseases, which are caused by eating the flesh of lower animals which are infested with larval forms of worms. Of these, the *trichina spiralis*, which is found in pork, produces a very fatal disease in man.

The intimate relation between the health of domestic animals and the health of the community suggests the propriety of a proper supervision of not only the health of the animals of a community, but of the animal product sold for human food. To accomplish this end, the various boards of health not only of communities, but of States, should have, in addition to the human physicians, a well qualified veterinarian. This plan prevails in those European countries which have devoted the most attention to the prevention of the diseases of mankind. Many of the States are already copying the most advanced European plans, and with excellent results. Massachusetts is now engaged in the excellent work of ridding the State of tuberculosis among cattle. Under proper health officers all the cattle within the State are being tested with tuberculin, and if they respond to the test they are destroyed. The animals which do not respond are considered healthy and are so branded. The diseased animals are paid for by the State. After the State is once free from the disease among the cattle a strict quarantine will be enforced against other cattle coming into the State. The object of all this is not so much the freeing of animals from this disease as to protect the public health from that most devastating disease, consumption. While this method is the most practical for some States, it cannot be denied that it will work considerable injury in other States. Many of the Western States in which the cattle are not so thoroughly infected with tuberculosis can do much toward reaching the same results by testing animals to be used for breeding purposes and using only those that are found free from the disease.

#### Estimating Farm Profits or Losses.

An interesting article is given by an agricultural paper from a correspondent who last year, for the first time, kept an account of his receipts and expenditures, also taking an inventory of what he had on hand at the opening and close of the year. He makes a satisfactory showing, and is well satisfied with the results, hoping to do better this year. His farm really does better for him than his account shows, for he makes no account of what his family used from it, and includes in his expenses purely personal matters, as church and tobacco, medicine and barber, clothing and confectionery bill.

It would seem every way better to keep all such accounts separately unless for articles purchased for use directly in farm work. The proceeds of the farm are expected to pay for family and personal expenses, but they are not a part of the business of the farm. Two adjoining farms may be equally well managed and give equal returns; yet the owner of one may have several hundred dollars surplus at the end of the year; the other, nothing. If the latter has had sickness in his family, or has sent his children to school at a distance, or has spent much more than the other for dress, luxuries, or necessities, it does not show that his farm has been more profitable than the other.

That which is produced on the farm and consumed by the family as much deserves a place in the credit to the farm as does that which has been sold. On the other hand, the farm should be charged with all labor or money expended on, or for it. The rate at which labor should be charged is a somewhat difficult thing to determine. It is hardly fair to charge what would have to be paid if the work were hired at single day prices. No thoughtful man will claim that farms yield large profits, but it is unwise to make the business less desirable than the exact facts show it to be.

Probably no other business furnishes the proprietor and his family, if they live on the farm, so many things which reduce the living expenses, and yet are not always taken into account. The farmer who retires from his business and moves into town where he has to buy everything he eats is often surprised to learn how large a percentage of his food and of some other necessities his farm furnished.—*Prairie Farmer*.

#### Suggestions for Farmers.

The city-bred youth, although possessing many advantages over his country cousin, misses much that is really enjoyable by being confined in the limited and smoky areas of the city.

Although for many years the writer has lived in the city, yet the memory of his boyhood days spent among the green hills and mossy glens of his father's farm still forms a bright spot of fond associations. The tinkle of cow-bells, the smell of the clover, the chirrup of the squirrel, the drumming of the partridge, heard on some bright autumn morning, and sounds which awaken memories of loving interest.

Although many disadvantages are connected with life in the country, yet there are many advantages and pleasures which far outweigh the comforts of the average city dweller.

Fresh, pure, sunny air, contentment, and a love of nature should be the heritage of every farmer. But how many do we find discontented and discouraged, and longing to leave the old homestead and make their home within the precincts of some town?

Although by circumstances removed from far associations, nothing gives me more pleasure than to visit to some prosperous farmer at his pleasant home, and discuss with him the possibilities of this grand old occupation.

I do love to meet a prosperous farmer—one who is not burdened with debt and growing more so each succeeding year—a man who loves his occupation and also is master of the situation.

Of course, we must expect to meet failures among farmers as well as men of other occupations. Not every man who engages in business makes a success of the undertaking. But the man who likes his work, and strives to excel, can generally manage to secure independence in almost any walk in life.

Now, farming is a business of varied character and minute details, and requires experience, tact, education, and properly directed effort in more directions than one. The farmer must be informed on the care and breeding of live stock, on the successful raising of crops, on the best methods of marketing his products and the buying of his supplies. All these matters are important, and require training and executive ability in order to make farming a successful venture from a business standpoint.

I have in mind a man who was brought up in town and knew nothing experimentally of farm life, but who a few years ago bought a rough and stony farm from which the former owner could barely eke out an existence, and today he is making money. When asked of his success, he said that all his knowledge was gained through books and the agricultural press.

By reading these he got the best and latest ideas of other men who were engaged in farming, and had attained success in the business, and by following their advice, modified by good judgment to meet his particular case, he had become prosperous, and was looked up to with respect and admiration by his neighbors.

This man is intelligent, and uses his brains; he thinks and plans. But many men who have been born and bred on farms follow the traditions of bygone generations. They do a thing because their fathers used to do the same thing, and this of itself is sufficient reason why it is right that they should do it. Follow the advice of the agricultural writer they would not; they are prejudiced in their views, and do not look at the reason of things. They forget that the times are far different from what they were fifty years ago, and that things are continually changing, and in many cases for the better.

Farmers, as a rule, are too much given to grumbling, and are fond of drawing unfavorable comparisons with themselves and men in other professions and occupations. They seemingly forget that other men have trials quite as great as theirs.

Now, looking the matter over from an unbiased standpoint, we are inclined to think that the farmer does not have such a hard time of it after all. He certainly has less cause of complaint than he had a generation ago. The times have greatly changed from what they were fifty or even twenty-five or ten years ago. This is an age of great improvement and advancement; it is also an age of unparalleled prosperity. That the farmer receives his proportion of gain from the general welfare of the age no one can well deny.

Take, for instance, the gradual reduction in price of the articles in common use. It is a well-known fact that many manufactured articles have decreased in value from fifty to seventy-five per cent from what they were a generation ago.

While in some instances farm products may be lower now than ever before, yet the decrease in price has not been in as great a proportion as the reduction in the goods which the farmer is compelled to buy. He can buy a buggy to-day for less than one half what he could buy it for fifteen years ago, and other things almost equally low. Now, is not this a great benefit to the farmer?

Merchants and manufacturers are everywhere lamenting that the margin of profit is being reduced by keen and sharp competition, so that it only means a survival of those firms which are best able to cope with the exigencies of the times by ample capital and well-trained ability or natural shrewdness. The learned professions are filled to overflowing, so that the rank and file of the doctors, lawyers, etc., barely make a decent living; but competition in the farming industry is unknown. Farm lands can be bought to-day cheaper than ever before, and the number of men anxious to engage in the business is comparatively small. Yet we are confronted by the

fact of many deserted farms, and people who say that "Farming doesn't pay."

Yes, it is true that farming does not pay in a great many instances, but the fault is not with the business; it lies in the man. Many men who fail to keep afloat and pay their way at farming, fail because they have not the ability to manage. They are not lazy, and work hard year in and year out, but every year only leaves them farther in debt than the previous year. If they would quit work for themselves, and go to work for some man who has the ability to manage, they would make fair wages and be happier; but too many men are too anxious to govern and refuse to serve. While it requires brains to govern wisely and well, it does not require the same qualities of mind to faithfully obey orders.

While we do not wish to discourage any man who may be a farmer and in debt, yet if we may be allowed to give a little advice, we would say that if he is in debt, and is not bettering his condition, but rather getting more in debt each year, we say that he is a wise man if he gets out of it and goes at something by which he can make even a fair living and pay as he goes. But if the farmer, although he may be in debt, is making progress, then let him learn the methods of the best and most successful man in the business, and study to improve, and in nine cases out of ten success will crown his efforts.—*C. H. Burnett, in Farm and Fireside*.

#### Knowledge Necessary to the Farmer.

Every intelligent young man would naturally wish to choose a vocation that would exercise and develop his mind. There are few vocations that call into exercise so many branches of the natural sciences taught in our higher institutions of learning as the farmer's. In studying the composition of the soil and the history of its formation and origin, he applies chemistry, geology, and mineralogy. In studying the evolution of the vegetable kingdom, he calls upon botany, including the structure of plants and vegetable physiology. In studying the animals employed to stock the farm, he resorts to animal anatomy and physiology, and it would be well to go a little farther and acquaint himself with the birds that visit the farm by the study of ornithology. In this way he might learn what species are friendly to his pursuit and what inimical. And then how necessary in these times, when the farmer's crops are ravaged by swarms of insects of numerous species, that he should study entomology, and learn the names and habits of injurious insects and the best method of subduing and exterminating them. Again, who is so interested in the weather, so affected by its changes and extremes, by floods and drouths, by severe freezes and sudden thaws, as the farmer? If meteorology throws any light upon the subject, the farmer should master that science. All these branches of natural history the farmer should study, and he would find occasion for their application almost constantly in his daily pursuits. The farmer is, indeed, a co-worker with Omnipotence in the creation of the soil's product, and he is an improver upon Nature.—*P. C. Reynolds, in the New York Tribune*.

#### Why Not Have Good Roads.

Gov. Morrill in his first message says a good word for a reform which should engage the attention of every resident in the State. To quote from the message: "Every citizen is interested in having good roads. To the farmer who has to ship his products by rail it is a matter of special importance, lessening to a considerable degree the cost of transportation to the depot. And yet there is hardly a matter that will come before you that will awaken less interest, and there is no expenditure of public money so loosely guarded. The country is divided into small road districts; anyone is chosen supervisor who will accept; all who care to do so are allowed to work out their road tax at extravagant wages, and the result is that one-half of the tax judiciously expended under the direction of some competent and intelligent man, who has made a study of the best manner to improve the public highways, would be more effective and produce better results than are now obtained from the entire tax."

"A new system should be provided. The county commissioners should have charge of the roads, with authority to appoint a sufficient number of overseers to look after the roads of the county. All roads taxes should be paid in money, and it should be expended in the most practical and economical manner possible."

"The county commissioners should also be required to personally view and lay out all new roads, and assess damages therefor. The present system appointing road viewers should be entirely abolished."

There is too little attention paid to gardens on farms. A good garden on a farm adds to the health of the family, good health prolongs life and is a great disposition sweetener. The farmer's garden should be laden with the "choicest delicacies of the season," both of the small fruit and vegetables. Garden talk may be by some considered as now a little premature, but it is not. Now is the very time to seriously consider garden plants for next season, and especially so for those who have not been in the habit heretofore of enjoying the luxury there is in owning a first class garden. Commence now to make your garden plans. The ground cannot well be made too rich.—*Baltimore Sun*.

It is considered essentially necessary to educate our boys for the professions, for the law, the ministry, chemistry, engineering, medicine, etc., and provision is made for the same; but when it comes to industrial education, to the preparation of youth for the practical work of life, to the building of our industries, the making a living by toil, the sneer is passed along the line, especially by those who are well educated, and it bodes no good to the State [Missouri].—*Colman's Rural World, St. Louis*.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds a par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Yesterday, the 22nd, being a legal holiday, there were no College exercises.

Judge C. F. Foote, of Marion, visited College last week, and left his daughter in classes.

C. S. Green, Second-year, drops out of classes to manage his father's farm on Cedar Creek.

Representative Knipe and wife showed Representative Meredith and wife of Hutchinson, through the College departments on Monday morning. Senator Smith, of Kensington, Smith County, accompanied the party.

The first division of the Fourth-year Class presented orations in chapel on Friday of last week, as follows: "Traits and Trials of the Pilgrims," D. T. Daves; "The New Man," Flora Day; "Shelley's Poems," R. J. Barnett; "Force of Prejudice," B. W. Conrad; "Danger of Too Much Curiosity," Florence Corbett; "A Practical Reform," S. H. Creager; "Tribute to Ireland," F. A. Dawley; "What's in a Name?" C. D. Adams. Music, an instrumental solo, by Olive Wilson.

On Tuesday of this week Gov. Morrill appointed Mr. C. B. Daughters, of Lincoln, Regent of the Agricultural College in place of Regent Secrest, whose term expires in March. Mr. Daughters was at one time a prominent teacher in the State. He is a graduate of Ann Arbor, and for the last eighteen years has practiced law, first in Butler County and for the last ten years in Lincoln County. Mr. Daughters is a man of wide interests and active life, and the INDUSTRIALIST trusts he may find pleasant and useful service as a member of our governing body.

Forty of our students attended the State Oratorical Contest at Topeka, last evening. They report a large and enthusiastic gathering. The first place was awarded to Forrest Woodside of the State Normal, Emporia, who spoke on "The Province of Law." The second, to J. Alvin Sankey of the College of Emporia, with the topic "The Death of Holmes." The remaining contestants rank in the order given: Third, E. T. Hackney of the State University, "America's Sodoms and Gomorrah's;" fourth, J. Luther Taylor, Baker University, Baldwin, "The Hebrew in Civilization;" fifth, Roy T. Osborn, Kansas Wesleyan University, Salina, "The Supremacy of the Anglo-Saxon Race;" sixth, Chas. W. Boughton, Washburn College, Topeka, "Savanarola;" seventh, C. E. Flanagan, Ottawa University, "The Relation of Invention to Progress;" eighth, D. D. Hoagland, Southwest Kansas College, Winfield, "Protestantism the Defender of Liberty." Mr. Sankey, who took second place, was a student here in 1889-90.

Prof. Will discussed "Money" in the chapel. In primitive society no money was used, but all exchanges were effected by barter. This was exceedingly inconvenient, and it was succeeded by the use of commodities generally wanted, as media of exchange. For this purpose, nails, shells, soap, cattle, gopher's tails, and many other articles have been used. The work of finding customers who had the desired articles to trade, and the difficulty in making change, made the barter system very unsatisfactory. The most highly-developed monetary system known in ancient times was the system of using material having but little or no commodity value as money. This, called numery money, succeeded wherever the volume was limited and counterfeiting prevented. China, Egypt, Athens, Sparta, Carthage, and Rome all used this money with success, so long as they did not permit the use of silver and gold as money. But the financial system of a country should be such as will permit the expansion and contraction of the volume of money to meet the demands of business. Numery money does not appear to have possessed this quality in a high degree. These moneys were credited by law, and had but little, and sometimes (as in the case of the iron money of Sparta) no value as a commodity. During the universal anarchy of the "Dark Ages," commodity money alone prevailed, for that only was acceptable in an age when confidence was destroyed, contracts nugatory, and law a matter of brute force. The methods by which commodity money was sometimes adopted, and numery money driven out, may be illustrated by the history of Rome. Until about 269 B. C. the numery money of Rome was made of copper, and silver and gold were commodities. The senate made all laws regulating money. When Tarentum was captured, 269 B. C., a large quantity of silver was taken. To make a market for this silver, the senate sanctioned its use as money. Later, after Cæsar had gathered gold from Spain and Gaul, he introduced the gold standard, and by so doing became a wealthy man in a few months. After the use of gold and silver as money became general, numery money was forgotten, and the value of money was based upon the commodity value of the substance used, instead of upon the

laws of the country and the confidence of the people. The cost of maintaining a commodity money is great. Substances noted for their scarcity are used, and often, when there is not enough of one metal, two must be used. If money is scarce, goods are cheap; while when goods are dear, money is plentiful. When two metals are in use, one is sure to be more valuable as a commodity than the other, and the more valuable one ceases to circulate. To represent the metallic basis for paper, a chart was used which showed the little block representing the "gold reserve" which the Secretary of the Treasury tries to keep in the treasury, and, resting upon it, very delicately poised, was the mountain of currency and credit. The present "run" upon this "gold reserve" means the constant threatening of the financial edifice.

The College Social on Thursday evening was a most enjoyable affair. Stereopticon views in the chapel occupied the early evening, and later the classes entertained themselves and visitors in the various rooms. The following graduates were present: Nellie Sawyer-Kedzie, '76; G. H. Failyer, '77; J. T. Willard, '83; F. A. Marlatt, J. E. Payne, '87; Bertha H. Bachelier, '88; Mary C. Lee, '89; Bertha Kimball, Harriet E. Knipe, S. C. Mason, '90; D. C. McDowell, Bertha Winchup, Effie J. Zimmerman, '91; Grace M. Clark, Geo. L. Clothier, F. C. Sears, Ruth T. Stokes, '92; C. A. Kimball, Rose Edith McDowell, Nora Newell, G. W. Smith, '93; Clara Castle, Lorena E. Clemmons, Jephthah W. Evans, Isabella Russell Frisbie, Minnie L. Romick, Winnie L. Romick-Chandler, Lucy H. Waters, '94.

## GRADUATES AND FORMER STUDENTS.

J. A. Scheel, '94, teaches at Bushong.

Bertha Bachelier, '88, a successful teacher in the Junction City schools, visited yesterday and today with College friends.

And now it is Ed. Allen. The Carlisle Indian Helper is authority for the announcement that Edgar A. Allen, '87, and Miss Ida Johnson, a young lady teacher in the Chilocco Indian School, were married at the School on January 9th last. Mrs. Allen is a young lady of Wyandotte descent, and was formerly assistant in the Carlisle Indian School at Carlisle, Pa. Mr. Allen has been appointed Superintendent, and Mrs. Allen, Matron, of the Indian School at Perris, California, where they may be addressed.

## FARMERS' INSTITUTES.

Held Under the Auspices of the Agricultural College.

Institutes will be held at the places and dates as stated below, and the College will be represented at these institutes by the members of the Faculty named:—

Washington, Washington County, February 28 and March 1; Professors Walters and Mason appointed.

Wakeeny, Trego County, March 1 and 2; Professors Georgeson and Graham appointed.

Oak Grange, Shawnee County, March 6th and 7th; Prof. Walters and Mr. Sears appointed.

Goodland, Sherman County, February 28th and March 1st; Professors Graham and Will appointed.

## Two Good Institutes.

AT CLAY CENTER.

The Farmers' Institute held at Clay Center, February 15th and 16th, was fairly well attended, and the interest manifested by those present was all that could be desired. On Friday afternoon about sixty farmers were in attendance; at the evening session the court room was well filled; and on Saturday about the same number of people were in attendance as on Friday. One feature of the institute was the presence of farmers who lived remote from town.

The papers were all valuable and the discussions excellent. Among the more important were "Corn Culture on Upland" by E. H. Dimity, "Ensilage" by J. L. Warner, the last based on a practical experience during the present feeding season.

Among the valuable papers presented at a later session but not heard by the writer, were "Recreation on the Farm" by Prof. Heusner, "Training the Farmer's Boy" by Prof. Merten, "Woman's Work on the Farm" by Mrs. Bumstead, and "The Winter Dairy," by John L. Mayos, who acted as foreman on the Agricultural College farm from 1872 to 1875.

Much of the success of the institute was due to the interest taken and preliminary work done by Mr. Mayos, the secretary. Those present expressed satisfaction with the result, and another meeting has been called for next month. The College was represented by Secretary Graham and Prof. Lantz.

D. E. L.

AT PEABODY.

The yeomanry of Peabody were out en-masse, as they always are on such occasions, at the institute held in the Knights of Pythias Hall in that city Thursday and Friday, February 14th and 15th. The local program was worthy of the attendance, and additional attraction was furnished by the announcement of a paper by Secretary Coburn on "Fertilizing with Brains" and an address by President Taylor of the State Normal upon "Some improvement in Country Schools." Both of these contributions struck the thought centers of the hearers and were intense in profitable suggestions. From the College, Mrs. Kedzie brought a paper upon "Thinking at Dinner," and Professor Popenoe spoke upon typical injurious insects and the methods of their destruction.

Besides certain papers that the reporter arrived too late to hear, there were presented, from Marion county, practical and profitable discussions upon "Wheat Growing," by C. E. Westbrook; "Corn Growing And Using," by R. Kent; "Alfalfa," by D. J. Fraser; "Best Feed for Fattening Cattle," J. W. Pavener and John Beeton; "Irrigation and Circulation of Water in Soils," by editor W. H. Morgan; by Miss Verna Cooper, a paper upon "District Schools" and by Mrs. C. L. Hale one upon "The House that We Build." As was to be expected under the administration of Pres. T. M. Potter and Secy. D. J. Traser, the institute was all that could be desired in the quality of the productions and the character of the actively interested audience.

E. A. P.

## What a Farmer Thinks About the College.

Mr. G. J. Maelzer, of Centralia, attended the Short Course in Agriculture. That he enjoyed it and profited by it, his letter to the Centralia Times attests. He says:—

"We arrived at the College on Wednesday morning, February 6th, and found several farmers from all over the State in attendance. Although the attendance is not as large as might be expected, the lectures seem to be the more interesting. After the stated time is passed, there is no tiring of audience or lecturer, questions being asked by hearers and readily answered by the professors, and to the point. In fact, every one belonging to the College makes it pleasant, entertaining, and profitable to visitors. Let me remark right here, that every farmer who attends the lecture course profits greatly by it, and will be amply repaid by the knowledge he gathers in every department pertaining to farming.

I should recommend a visit to the College, and especially to the short lecture course for farmers to every farmer, particularly to young men starting out in life as farmers, if circumstances will permit. Let me state in this connection that the cost of living here is reduced to a minimum.

The time not taken up by the lectures, I spent in looking over the different departments of the industrial. The printing office is well equipped with good machinery. The Superintendent, Mr. Thompson, kindly showed us the workings and management of this department. Here we find some of the students well up to their work, we might say competent, in any work belonging to this branch.

The culinary department, presided over by Mrs. N. S. Kedzie, Professor of Household Economy and Hygiene, is well equipped, has everything generally found and needed in a kitchen of large size. Here we find the girl student in her kitchen uniform when at work kneading and rolling the dough, baking bread, biscuits, and cake, cooking, boiling, and broiling meats, stewing tea and coffee, setting and arranging tables, and finally serving and waiting on table whenever occasion arises. We partook of the meals, and found that young ladies can learn the culinary art to perfection here.

"The Sewing Department, presided over by Mrs. E. E. Winchup, is well arranged. Work shown us here testified that this department is in the hands of a competent teacher, and young ladies find it to their interest to take advantage of the same.

"In the carpenter shop we found some fine work done by the students which shows the efficiency of management of this department. The iron shop, the farm barn, the Horticultural Department, are all well equipped and under the supervision of competent men.

"In all, the College is a credit to the State, and speaks well for the officers in control."

## COLLEGE ORGANIZATIONS.

Student Editors — T. W. Morse, G. W. Fryhofer, Maud E. Kennett.

Hamilton Society.—President, C. A. Johnson; Vice-President, W. L. Joss; Recording Secretary, C. E. Piccomb; Corresponding Secretary, W. L. Hall; Treasurer, M. L. Heckert; Critic, B. W. Conrad; Marshal, A. W. Staver; Board of Directors, R. J. Barnett, C. S. Marty, G. C. Hall, J. Poole, L. G. Hepworth. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

Alpha Beta Society.—President, J. B. S. Norton; Vice-President, Gertrude Havens; Recording Secretary, R. W. Rader; Corresponding Secretary, Nora Fryhofer; Treasurer, A. C. Havens; Critic, A. E. Ridenour; Marshal, E. P. Smith; Board of Directors, A. C. Beck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

Ionian Society.—President, Ethel Patten; Vice-President, Ada Rice; Recording Secretary, Gertrude Stamp; Corresponding Secretary, Myrtle Hood; Treasurer, Emma Finley; Marshal, Hope Brady; Critic, Dora Thompson; Board of Directors, Laura McKee, Flora Day, Mabel Selby. Meets on Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

Webster Society.—President, T. W. Morse; Vice-President, F. E. Rader; Recording Secretary, J. B. Dorman; Corresponding Secretary, E. G. Gibson; Treasurer, W. B. Chase; Critic, W. H. Stewart; Marshal, J. R. Henrey; Board of Directors, G. C. Wheeler, C. D. McCauley, F. E. Uhl, F. R. Jolly, E. B. Patten. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

February 16th.

The Hamilton Hall was not so well filled as usual when the Society was called to order. Recording Secretary Pincomb was among the absentees and Carl Snyder filled his place. Devotion was led by J. C. Wolcott. The first on the program was an essay by G. W. Jackson in which he told us of an unfortunate vacation he spent in the West. F. A. Dawley delivered an oration on the scenic beauty and grandeur of Mt. Etna, in Switzerland. M. R. Smith favored the Society with a good select reading on the "Heroism of Grace Darling." "Resolved, That Carlisle's policy is a solution of the financial situation," was the question for debate. J. W. Holland and H. E. Smith presented the affirmative side, saying that the bonds of the Government are not taxed, but should be, as proposed; that in the proposed system the banks



would give better security to depositors; that the present system permits the gold of the national treasury to be continually drained out by means of the treasury notes. The negative was argued by C. S. Evans and Leslie Fitz, who said that many of the obligations of the Government are not required to be paid in gold, and that it is arbitrarily done; that the proposed law gives the bankers unprecedented control over the money of the country, and is most violent class legislation. A lengthy and interesting number of the Recorder was presented by its editor, G. W. Finley. A number of Ionians, chaperoned by Mrs. Winchip, visited the Society after recess. These visits are extremely interesting, and it is the wish of the Hamiltons that they may be oft repeated.

W. L. H.

February 15th.

The Ionian Society was called to order at the usual time by President Patten. After singing, Mary Wilkin led in devotion, followed by roll call. The roll was increased by the following names: Etta Smith, Clara Newell, Stella St. John, and Minnie Lyon. The program was opened with a declamation by Mabel Gillespie, entitled "How does the Leaf Fade?" We were next favored with a piano solo by Miss Helder. An excellent number of the Oracle was read by its editor, Ethel Patten, having for its motto, "The Society really must keep better order." Susan Johnson, the committee on extemporaneous speaking, chose Winifred Houghton and Hope Brady, who spoke simultaneously on "Cooking" and "Sewing." The next feature of the program was a symposium on the question, "Resolved, that woman's influence on man is greater than man's influence on woman," was led by Hilda Leicester on the affirmative and Grace Stokes on the negative, and Flora Day, neutral. This was followed by a piano duet by Elsie Crump and Olive Wilson. The program was closed with an impersonation representing a miniature Ionian Society. After the regular business the Society adjourned.

M. H. H.

#### Something Good to Read.

We farmer folks need for the home reading circle such a vast lot of papers and books, especially during all the winter months, when there is comparatively little else for us to do but read. Don't forget to list a number of farm, stock, and agricultural papers among the home necessities, the *Epitomist* among them without fail,—and let's help to put down the prejudiced, senseless farmer cry of "Not any paper farming for me!" To be sure it is only among the inexperienced and non-reading farmers that we find this opinion of "paper farming" expressed, for those of us who have farmed for years, and read from first to last, know the necessity of them, the help and the pleasure of them. But let there be also books, magazines, something special for the wife and mother, and other special reading that will be of interest to the children and young folks if you would hope to keep those young folks contentedly at home. The girl that is housekeeper at our little farm never knew the enjoyment of books and papers until she came to live with us. Her home was one of the dreariest; bare walls and floors; life a mere existence; reading matter an unknown quantity; work the order of the day, without let or hindrance, and land and money the objects of idolatry. There are thousands to the father's credit at the bank, and of acres he has hundreds. But there is not the least spark of love for that home in the daughter's heart, and she vows never to return where the meaning of home was never known to her. Isn't it too bad that boys and girls should bear no love for home? But the world is all too full of them, and the fault lies with the parents. You never find it so at homes that are filled with the papers, periodicals, and books of the day, and where parents are interested in all that interests their children.—*Nellie Hawks, in Agricultural Epitomist.*

#### The Engine and the Man.

I once had a curious and instructive conversation with an engineer who had charge of a large stationary engine. It was a beautiful engine, and worked as true as steel could work. The man surprised me by telling me it had been at work ninety years, "and do you know," he added, "it has had eight masters; I am the eighth who has had the care of it; the others are all either dead or worn out, and yet it goes as if were as young as ever. Very strange, sir, isn't it, that an engine should live so much longer than a man; and it is not hard work for us, either, or exposed work, for the room is always warm and comfortable, and the place is, of course, clean and light." "What did the men die from?" I asked.

"Well, three or four, I am afraid, died of drink, another of bad temper, another of worry, and so on, but the engine went on all the same." The fate of the engine, its long life and continued industry, puzzled the man. He often in his lonely hour thought of it, and wondered how many men would follow him before the engine began to break down. It did not puzzle me. That engine worked a great many hours a day truly; but it was equable in its work; it never ran loose; it was true in its vocation, it was bright as a new pin, clean in every point; it was served with best but simplest fuel food; it had its furnace tubes clear; it was saved from friction by having its parts properly oiled; and drank nothing but water. So it lived on nearly three generations, with a good chance of living through three more; it was allowed, in fact, to make the most of its physical life.

Its masters did not make the most of their lives; they might have been somewhat industrious, but they were not so orderly, so true, so steady, so clean as they made the engine; they had not learned so well how to find the best food and drink for their own la-

bor as has been found for the engine, they did not make the most of their lives, and therefore they stopped, but the engine went, still merrily, on its way.—*Longman's Magazine.*

#### Feed the Brain as Well as the Soil.

Success in agriculture, as well as in any other business, depends upon the amount of thought bestowed upon it. Energy of brain is as essential to success as that of muscle. The habit of reading and close observation is of as much importance to farmers as to merchants or manufacturers. Reading incites thought which almost invariably results in prompt and judicious action. The reading, thinking farmer is the one who is prompt to take advantage of any and all methods that will aid him in bettering his condition, with the resulting effect of increasing the prosperity of the neighborhood in which he resides.

Feed the brain, as well as the soil. In these days of material progress it has come to be recognized as a fact that the brain and hand should co-operate in the systematic advancement of agriculture. Not only should the reader be willing to receive information but he should, if his experience will warrant it, be equally as willing to impart the cause of his success to others. The interchange of ideas among practical farmers is productive of the greatest good, because it results in placing at the service of others the results of these improved methods of farming. There is nothing like the free interchange and comparison of practice and opinion, in order to promote agricultural progress.

The most successful farmers are those who have been progressive and watchful, and have given each other the benefit of their several experiences. Our western farmers are backward on this point. They write less about their methods than do farmers at the east, but we believe they are even closer readers than their eastern brothers. We want our western subscribers to feel perfectly at home in the *Orange Judd Farmer*, for this central edition is made especially for their benefit. Write out your experience on any matter that may benefit others in your county or State, or on any topic you read about in our columns, or that is suggested by subscribers' queries. Never mind if you have not written for the press before, just say what you have to say and leave it to us to arrange for the printer. Such a talk back and forth between the farmers of Illinois, Wisconsin, and Minnesota, or any of the States in our central west, will also serve a good purpose in bringing farmers together and making them know each other better.—*Orange Judd Farmer.*

#### Preserving Fruit Shipments.

A test of shipping a carload of fruit and flowers from California to the East without the use of ice has been made recently. A car was sent from Los Angeles to New Orleans, which was supplied with sterilized air during the whole time of transit east and return to California, carrying back a part of its shipment to show how well it had been preserved. After being out fourteen days, both the fruit and the flowers were perfectly fresh, and even the stems of the grape had not wilted, although the weather had been as warm as 104 degrees during part of the journey.

The sterilized air is produced by condensing air by means of the air brake cylinders, and thus generating heat which destroys all microbes, bacilli, and fungus germs. The supply of sterilized air, it is said, can be kept up as the train proceeds at almost no cost. The new process is called the Perkin's method, after the inventor, an Episcopal clergyman of California. The process can be as easily applied to ocean vessels, and it is claimed that it will revolutionize the carrying trade of perishable fruits.

Another method which Californians are experimenting with, having the same end in view, is shipping fruit in carbonic acid. Both methods are claimed to be very promising.—*Tulare Register.*

#### A Naphtha-Burning Road Wagon.

Another step has been taken toward the extermination of our noble and useful friend, the horse. The naphtha road wagon built in Chicago is a success. Its builders "scoot" all about town by night, and many a pedestrian going home at a late hour to search, with latch-key in hand, for the elusive keyhole, has been startled as the horseless carriage buzzed by him at a smart pace, sometimes reaching twenty miles an hour. The machinery is compactly stowed away in the carriage box, and the carriage looks almost precisely like any carriage without shafts. Four horse power is claimed. You fill and light your naphtha lamp, and can then travel a hundred miles at a cost of two cents a mile. The livery men might as well sell out at once; for the new wagon is so nearly a demonstrated success that only slight improvements will need to be made in order to bring it into common use. It can be steered perfectly and stopped much more quickly than it is possible to stop a horse. The only impediment to its general introduction is poor roads, but even if no more than three horse power is realized this obstacle will be easily surmounted.—*Farm and Home.*

#### Short Lecture Course for Farmers.

Beginning on the first Tuesday of February each winter, a two-weeks course of lectures is given on agriculture and related arts and sciences. This is provided for these farmers and others who cannot take up the fuller work of the regular College classes. Members of the Faculty are assisted in delivering these lectures by prominent farmers, stock raisers, and fruit growers of the State; and full discussions of the topics presented bring out the varied experiences of those attending. This course, during the winter of 1893, was attended by about 40 farmers.

#### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

#### MANHATTAN ADVERTISEMENTS.

##### BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

LESLIE SMITH. College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

##### DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

##### CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

K. NOSTMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

##### WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

##### DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

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A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

##### DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

##### PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

##### LIVERY.

PICKETT & LONG'S LIVERY STABLE.—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

##### MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

##### SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

##### GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

##### PHYSICIANS.

INFIRMARY for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. SOLON D. ROSS, M. D., 523, 525, 527 P'tz Av.

#### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. F. HOOD, Supt., Manhattan, Kan.



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### STATE AGRICULTURAL COLLEGE

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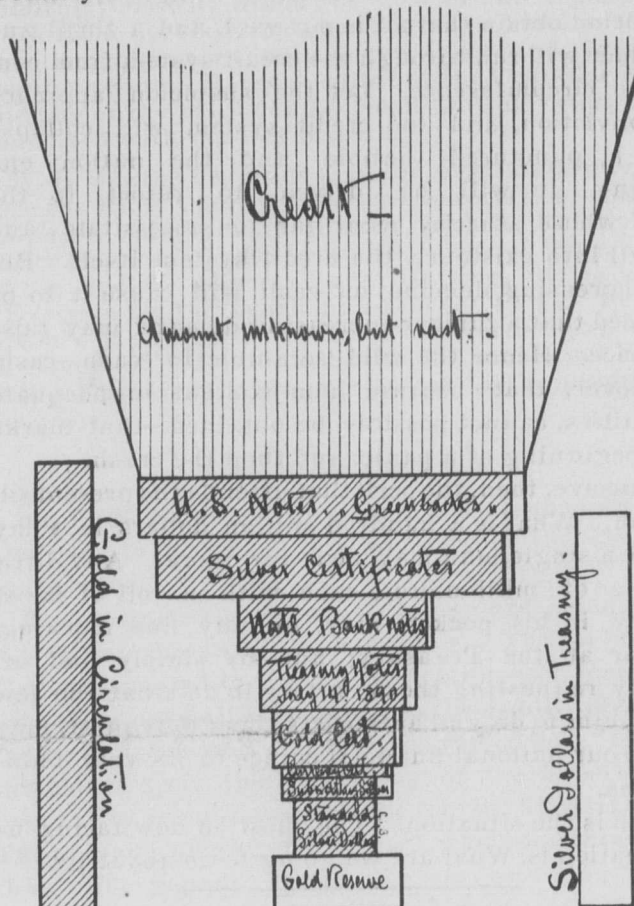
#### THE FINANCIAL SITUATION.

BY PROF. THOMAS E. WILL.

THE most casual newspaper reader cannot have failed to observe that the National Government is struggling with the mighty problem of maintaining its "gold reserve;" and that, thus far, it has found its only solution in the "sale of bonds." Remembering the impenetrable mystery in which all questions of finance, even the simplest, are veiled, it may be in order to explain briefly the meaning of a "gold reserve" and the significance and effectiveness of "bond sales." In doing so, we may be able to throw some light upon the stability of our present financial system.

In *Public Opinion* for June 17th, 1893, p. 251, appears a table prepared by Bradstreet's from a statement made by the officials of the U. S. Treasury. To render them more intelligible, I will present these figures graphically.

The shaded sections show the money in circulation June 1st, 1893; the unshaded show the money in the Treasury.



OUR FINANCIAL PYRAMID.

	General stock coined or is- sued.	In Treasury.	Amount in circulation June 1, 1893.
Gold coin.....	\$523,592,686	\$115,646,742	\$407,945,944
Standard silver dollars..	419,332,305	361,278,816	58,053,489
Subsidiary silver.....	77,558,212	11,394,610	66,163,602
Gold certificates.....	104,794,639	3,324,670	101,469,969
Silver certificates.....	328,766,504	6,650,912	322,115,592
Treasury notes.....	143,189,874	10,684,691	132,505,183
Act July 14, 1890.....	346,681,016	27,658,693	319,022,323
U. S. (legal tender) notes			
Currency certificates.....	17,780,000	825,000	16,955,000
Act June 8, 1872.....	177,164,254	5,243,455	171,920,799
National Bank notes.....			
Totals.....	\$2,138,859,490	\$542,707,589	\$1,596,151,901

Bradstreet's figures for June 1st, 1893. See *Public Opinion*, June 17th, 1893, p. 251.

It will be remembered that one of the theories upon which our financial system rests is that paper money, whether issued by Government or by banks, is absolutely worthless unless based upon and promptly redeemable in silver or gold; or, possibly, in gold alone. That is, the holder of a paper dollar, or of a million paper dollars, bank notes, Treasury notes, greenbacks, or what not, is at liberty at any time to demand, and is entitled promptly to receive, coin, dollar for dollar, in exchange for his paper. Paper money, then, in its present form, is a "call loan" without interest; and the Government is liable to be called upon at any moment to pay it.

How great, next, are the liabilities of the National Treasury in the matter of "redeeming" paper money? Waiving the 172 millions, nearly, of National bank paper that, in case of bank failures, the Treasury must stand good for, there are U. S. notes, or "greenbacks," in circulation amounting to 319 millions; treasury notes, 132 millions; gold certificates, 101 millions; silver certificates, 322 millions. The 17 millions, nearly, of currency certificates are redeemable in greenbacks (see Act of June 8th, 1872), but those greenbacks are in turn redeemable in coin. The silver certificates are redeemable in silver; yet it is possible the redeeming process may not stop here. "Since it is the established policy of the United States to maintain the two metals (gold and silver) on a pari-

ty with each other upon the present legal ratio," it may be held necessary to redeem silver itself with gold (see President Cleveland's message of August 7th, 1893, and report of Commissioner on Banking and Currency, Fifty-third Congress, 3rd Session, pp. 295-7). The "small change," or subsidiary silver, is also backed up by the Treasury and made as "good as gold;" while, on the top of the heap, is a mountain of credit,\* much of which rests upon the expectation of specie or, ultimately, of gold payment.

A pretty big job, one might imagine, has Uncle Sam assigned himself in the matter of redeeming. And now, on the other hand, what has he with which to redeem? Glancing at the diagram, we see a long bar representing the silver dollars in the Treasury. In addition to these is a considerable volume of uncoined silver bullion, amounting, the President declares (message of August 7th, 1893), to more than 147 million dollars. "All," however, "but a very small portion of this bullion remains uncoined and without usefulness in the Treasury," while beside it lie 361 million silver dollars, reserved for the purpose of redeeming silver certificates and such other Government paper as people may be willing to exchange for silver when they can as easily get gold.

Nominally the Secretary of the Treasury may redeem the Treasury notes of 1890—given in exchange for "Sherman silver"—with silver or with gold, at his own option (see act of July 14th, 1890). The administration holds, however, that those presenting paper (other than silver certificates) for redemption must have the kind of metal they want, however scarce and precious it may be, and however plentiful the other kind may be; for otherwise the parity in value would not be maintained between the two metals; i. e., if an applicant found it easier to get silver than gold for his paper, he would at once want gold, and his preference for the yellow metal would enhance its value over that of the white.

Since the demand is not, at present, for silver, the silver is unavailable for redeeming paper; and, as said, even the outstanding silver dollars and silver certificates may yet be redeemed in gold to "maintain the parity." To accomplish, then, this redemptive work, Uncle Sam has to fall back upon the "gold reserve," namely, the little pile that lies at the base and supports the inverted pyramid. Since in the past, the demand for gold has been relatively slight, the tradition has been that so long as the gold reserve has amounted to 100 millions, the country is safe. Should the reserve, however, prove inadequate, as in case of a "run" on the treasury for gold, the nation would be "driven to a silver basis"—i. e., would be compelled to redeem in silver—or would be forced to "suspend specie payment,"—abandon redeeming altogether. Either alternative, it is held, would prove a dire catastrophe, involving the sacrifice of national honor. In other words, Uncle Sam must maintain his gold reserve or go into bankruptcy. Thus, as may be seen, the national honor and solvency rest upon a rather slender foundation.

At the time these figures appeared there were symptoms of the approach of a panic; yet, at the same time, such comment as this appeared in the papers: "It is easy for any intelligent observer to see that the present situation is free from the menaces that have heretofore preceded panics. The clouds in the financial sky, are no larger than a man's hand, comparatively speaking," etc. etc.

In less than a fortnight, however, appeared Pres. Cleveland's calamity proclamation, beginning—

"Whereas, distrust and apprehension concerning the financial situation which pervade business circles have already caused great losses and damage to the people and threaten to cripple our merchants, stop the wheels of manufacture, bring disaster and privation to farmers, and withhold from our workingmen the wages of their labor; and,

"Whereas, the present peril of our condition is largely the result of a financial policy," etc.; and ending by convening an extraordinary session of Congress "to the end that the people may be relieved through legislation from present impending danger and distress."

In his message of Aug. 7th to the Congress thus convened, the President, considering the "alarming and extraordinary business situation, involving the welfare and prosperity of all our people," declares: "Our

\*Mr. William C. Cornwell, President of New York State Bankers' Association, in the *Forum* for February, speaking of the wide use of credit in the United States, says: "Commerce is today using check-money to an extent of 94 per cent out of 100 per cent of its transactions."



unfortunate financial plight is not the result of untoward events nor of conditions related to our natural resources, nor is it traceable to any of the afflictions which frequently check national growth and prosperity. With plenteous crops, with abundant promise of remunerative production and manufacture, with unusual invitation to safe investment, and with satisfactory assurance to business enterprise, suddenly financial distrust and fear have sprung up on every side," etc.

The President then goes on to explain that "These things are principally chargeable" to the fact that Congress, on July 14th, 1890, provided for the monthly purchase of four and one-half million ounces of silver with the treasury notes shown in the diagram; and that individuals were actually presenting these notes at the Treasury and asking that, as per contract, they be redeemed. He shows further, that, since the Secretary of the Treasury felt bound to redeem them in gold in order to "maintain the parity," the "gold reserve of a hundred millions" had, "for the first time since its creation, been encroached upon," and that the underpinning was being knocked from under the financial edifice. Cause enough, truly, for terror and panic! He therefore "earnestly recommends" that Congress shall at once put a stop to the buying of silver with paper which, in forty-nine cases out of fifty-four, is being promptly turned into crowbars and used with deadly effect in prying out the gold bricks from under the financial structure.

Congress did as it was bid, and declared that no more silver should be purchased. It did order, nevertheless, that the silver bullion lying idly in the Treasury should be coined; this provision, however, for "watering the currency" and "shaking confidence" the President promptly vetoed. At the same time, we may note in passing, he took occasion to "earnestly present the desirability of granting to the Secretary of the Treasury a better power than now exists to issue bonds to protect our gold reserve."

If newspapers of the "Repeal-the-Sherman-law-and-go-home" type really imagined that the evil they deplored had now been eradicated, their study of the case must have been superficial indeed. Rhodes' *Journal of Banking* had already pointed out what the President now recognizes in his message to the Fifty-third Congress (p. 35); viz., that not simply newly issued Sherman Treasury notes, but all government paper, save silver certificates, could be used in exhausting the gold reserve; and not only so, but that, since paper—certainly Treasury notes and greenbacks—once redeemed is paid out again by the Treasury, and since it must be redeemed and re-deemed as often as presented, a single paper dollar of the above type, if presented often enough, could itself exhaust a gold reserve however great; just as a single leak, however small, could in time empty the largest reservoir.

How rapidly this process may be carried forward with a half-billion of such dollars pitted against a hundred millions of gold one may readily imagine. If the single dollar may be compared to the slender siphon that will empty, in time, a mountain lake, the actual paper that may be presented resembles the leak in the dike above the city of Johnstown.

But the "calamity" (Message, p. 36) the President sees impending might still be averted were adequate means provided for recovering the gold men are daily drawing out. One might suggest that governments in all lands and ages have relieved their necessities by the exercise of a right which is the one peculiar badge of sovereignty—the right, viz., of taxation. It might get the gold by taxing it into the treasury or by buying it with the proceeds of taxation. This, however, does not seem to have occurred to our Solons. There are but two other ways whereby governments ordinarily obtain money—plundering and borrowing. Since we have no war on our hands, we cannot consider the first of these, therefore we employ the last: we borrow the gold back. Hence we have in operation an endless chain. Paper is redeemed and gold is drawn; the Government now borrows back the gold by selling bonds. Next the paper is presented to be re-redeemed, and the gold is again withdrawn, only to be borrowed back a second time; and thus the process continues whereby the national debt, in time of profound peace, is being piled higher and higher. How rapidly this process is going on we may judge from the fact that four times already within a year the gold has been borrowed back; while the rapidity with which the gold is being withdrawn, especially of late, together with the fact that gold so withdrawn is not, as commonly supposed, being used chiefly to pay bills abroad, is clearly shown by the following table from the *Chicago Times* for February 19th:—

These sort of tables are being passed about Congress and are very much instructing statesmen. The following shows the gold drawn from the sub-treasury for redemption of United States notes, as well as the gold which took unto itself wings and made flight to Europe during the years expressed:—

Fiscal year—	U. S. Notes.	Gold Exports.
1879	\$ 7,976,698	\$ 4,587,614
1880	3,780,638	3,639,025
1881	271,750	2,565,132
1882	40,000	32,587,880
1883	75,000	11,600,888
1884	590,000	41,081,957
1885	2,222,000	8,477,892
1886	6,803,699	42,952,191
1887	4,224,073	9,701,187
1888	692,596	18,376,234
1889	730,143	59,952,285
1890	732,386	17,274,491
1891	5,986,070	86,362,654
1892	5,352,243	50,195,327
1893	55,319,125	108,680,844
1894	68,242,408	76,978,061
1895 (seven months)	102,076,505	57,899,745

Totals.....\$265,175,334 \$632,913,407

The reader will observe that, according to this table, more than the traditional "safe" gold reserve has leaked out of the Treasury within the last seven months; while but little more than half this sum has been exported. Statesmen, it is implied, are beginning to inquire, Where is it, and why was it withdrawn?

Not only is this process prodigiously expensive; it is dangerous. I have referred to the mountain of credit piled upon our heap of cash. Credit is an indescribably delicate and sensitive thing. Let but a suspicion obtain that all is not well, and a thrill and shudder will run through the credit system from center to circumference. Let the suspicion approach a conviction, and the credit system will collapse like a punctured bubble and the nation employing it will be driven to resort to the cash whose scarcity went far to necessitate and to call into existence the credit system itself. But the increasing demand for cash will cause it to be hoarded that a further-increasing demand may raise its price. Hence the wild scramble for cash—cash, moreover, that because non-existent in adequate quantities, cannot possibly be obtained—that marks the beginning of a panic; and then the crash.

Conceive, then, the peril that attends the present situation. What is a hundred million dollars in a day when a single man may own far more? Any little coterie of millionaires, each with a roll of paper money in his pocket, may, on any fine morning, appear at the Treasury; and by simply and urbanely requesting the Secretary to do what the law binds him to do and authorizes them to request, may shake our national financial edifice to its very foundations.

Such is the situation. The question now facing us as a nation is, What are we going to do about it?

#### "BREAD FROM STONES."

BY PROF. J. T. WILLARD.

A SMALL book bearing the above title has recently appeared, and has created a good deal of discussion in some of the agricultural papers. It is a compilation from the writings of Julius Hensel and others upon a system of fertilization of soils by means of powdered rocks. It is, perhaps, not wholly fair to Hensel to judge him by this fragmentary presentation of his views, but mingled with many good and true things are some that are so radically opposed to the best scientific evidence available that they ought not to be allowed to go uncontradicted. Hensel seems to be a social philosopher, and has written a book called "Das Leben," or, as we would say, *Life*. In this he discusses with other topics the cause of the decadence of agriculture which is alleged to exist in Germany. He attributes this to the use of stable manure and the so-called artificial fertilizers. He not only claims that this practice is detrimental to agriculture in the long run, but that the products so obtained are unhealthful, especially those produced from stable manure and other fertilizers containing ammonia. I have no desire to do anything but exact justice to the author, but the above statement seems to be a fair inference from the somewhat disjointed arrangement of "Bread from Stones."

The following extracts are probably the best brief pointed selections that can be made. He says in his preface that fertilizing with stone dust will—

1. Turn stones into bread and make barren regions fruitful.
2. Feed the hungry.
3. Cause healthy cereals and provender to be harvested and thus prevent epidemics among men and diseases among animals.
4. Make agriculture again profitable, and save great sums of money which are now expended either for fertilizers that in part are injurious or in part useless.
5. Turn the unemployed to country life by revealing the inexhaustible nutritive forces, which, hitherto unrecognized, are stored up in rocks, in the air, and in the water.

A result worthy of the highest efforts of a government.

On page 92 we find the following:—

It is not to be computed how great an injury to health of men and animals has been caused by stable manure. Milk produced from ammonical plants paved the way by which the de-

structive spirit, diphtheria, has swooped down, after measles, scarletina, scrofula, pneumonia, had become the familiar companions of the Germans, who before were strong as bears. Artificial manure at last put the crown on this work of destruction.

From the standpoint of chemistry the most serious assertion of Hensel is that the application of nitrogenous fertilizers is unnecessary, and indeed often injurious by exciting an abnormal growth of unhealthy and unhealthful plants. He claims that all the nitrogen necessary to a plant can be obtained from the air, admitting, however, that if it comes their way the roots will take it up. Whether he believes nitrogen to be taken up in compounds or as free nitrogen is not made clear, but the inference throughout would naturally be that the free nitrogen is assimilated. He brings as evidence that the atmosphere is the real source of nitrogen, the statement that trees containing little nitrogen in their wood but much in their leaves are found growing on barren rocks, and that "The nitrogen of the leaves has evidently been furnished not by the rock, but by the air." He also regards it as "Manifest that if the soil were the proper source of nitrogen the roots, being in immediate contact with the soil, ought to show at least as much nitrogen as the parts above ground which are surrounded by air; but on the contrary they contain less." It is hardly necessary to point out that all this is not argument, as it totally ignores the fact that plants transport the constituents necessary for a given organ to that point, whether the organ be in the earth or the air. He knows this, too, for in another place he distinctly states that in the process of maturing, phosphorus passes from the straw to the grain. His worst error in this connection, however, is his total disregard of the many decisive experiments which have shown that none of the higher plants possess the power of taking up free nitrogen. The acquisition of free nitrogen by vegetation is limited to micro-organisms and some algae so far as yet observed. Some of these micro-organisms, by symbiotic growth upon the roots of the leguminosæ, enable the latter to profit by their power, and so clover, beans, peas, etc., are indirectly nitrogen accumulators. Hensel seems to think that, under the influence of plants, nitrogen and vapor of water combine to produce ammonia. He adduces no evidence to prove this, and none has ever been established. He also mentions the formation of ammonia when iron rusts, and points to the immense quantities of iron in soils as a means by which nitrogen is brought into combination. To the non-chemist it should be said that it is not iron oxide, the form in which iron is found in the soil, which produces ammonia, but metallic iron, and further that chemists attribute the formation of ammonia, even then, not to combination of nitrogen with the hydrogen of water, but to the reduction of nitrates and nitrites in the air.

If, however, Hensel's view is that plants acquire their nitrogen from its compounds in the air, he is none the less in error. Nitrogen compounds occur in but small amount in the air, and the total quantity brought down by rain, while not insignificant, is wholly inadequate to nourish a crop.

Hensel is not a chemist, whatever his friends may say to the contrary, or, if he is, the translators of his writings have done very poor work. His "chapter for chemists" defies interpretation. As a theorist he is not a success, as his theories are too often contrary to indisputable facts.

Notwithstanding the untenability of many of his views, it seems not only possible but probable that much of what he says is true, and that the treatment of soils he advocates may be very efficacious in some cases. He holds that, as soils are the detritus of rocks, the rational system of soil improvement consists in adding rocks in finely powdered form to the soil. He contends that, in limiting our fertilization to so great an extent to an application of the three elements, potassium, phosphorus, and nitrogen, we often fail to supply the ash constituents that a particular soil may need, owing to peculiarities of its formation or to the character of previous cropping. He also lays stress upon substances which occur in plants and animals in minute amounts only, such as fluorine, and thinks that their presence in a soil should be insured. His remedy, then, is to apply stone dust, which contains all the necessary ash constituents for plants, and for special crops he modifies the composition of the stone meal to meet the ash requirements of the crop. All this is very well, but it is not revolutionary, as some have seemed to think; it is purely a question of economy. If the necessary ash constituents in assimilable form can be more cheaply obtained by powdering rocks than by taking the more concentrated substances, then rocks will be

(Continued on page 104.)



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds a. par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Mr. Otis has been sick for a week, but is now on duty.

Professor Georgeson joined the grafting class for a few minutes last Wednesday.

The next number in the lecture course will be the Mozart Concert Company, Wednesday, March 6th.

President Fairchild and Mrs. Kedzie spent two days in Topeka this week on College business.

At its last meeting the Senior Class adopted a program and began preparations for class day exercises.

F. E. Rader, Fourth-year student, was a delegate to Lawrence this week from John A. Anderson Camp Sons of Veterans.

Mr. and Mrs. J. N. Limbocker of Manhattan spent a good part of Friday afternoon last looking through the College buildings.

The Manhattan Horticultural Society, F. C. Sears president, held its bi-weekly meeting in the Horticultural Hall, February 28th.

Prof. Will was unable to attend the Goodland Farmers' Institute an account of the illness of Mrs. Will. Secy. Graham went alone.

Tuesday afternoon Miss Stokes, assistant in Household Economy, held a reception for the gentlemen of the Horticultural Department and of the Fourth-year Class.

Mrs. W. Fryhofer of Randolph made glad the hearts of her son and daughter by spending a few days with them this week and hearing them "orate" Friday afternoon.

Prof. Will lectures on "The End of Education" before the Riley County Teachers' Association at Randolph, Saturday next. Regent Secrest also has a place on the program.

Chris. Kenney, First-year, has been kept from classes all week by the sickness of his mother and sister and the death of the latter on Thursday morning from pneumonia.

Among those who attended the State Oratorical contest, the general opinion seems to be that we could give as good an exhibition of oratory here once a year without any material change in our College work. But we have more important duties to attend to.

Miss May Murphey was thrown from her buggy Thursday afternoon by her horse's sharp turn at the southeast corner of the main building. Fortunately she fell on the small grass plot, and escaped with slight bruises. The horse ran around the building and stopped by the shops.

Died, at Fort Clark, Texas, February 21st, Mrs. A. C. Davidson, mother of the wife of Captain Edwin B. Bolton, 23d Infantry, U. S. Army, after a severe illness of four months. The deceased was well known to many in Manhattan, she having made her home with Capt. Bolton when he was on duty at the Agricultural College as Professor of Military Science and Tactics.—*Nationalist*.

In proportion to the size of the city in which it is printed, the Kansas City *Star* has a larger circulation than any other American newspaper. Its remarkable success has been achieved by its unflinching adherence to the rule of giving its readers the best that the *Star's* increasing revenues could furnish and its improved facilities could supply. The *Star* was the first newspaper to give to its readers a full week's papers—six evenings and Sunday morning—for 10 cents, a thing that could not be profitable except when done on the big scale on which the *Star* does everything. The *Star* was also the first to establish a weekly edition for the trifling price of 25 cents a year; 110,000 regular circulation for the weekly edition demonstrates the wisdom of the idea.

## Notes from the Botanical Department.

The collection of Florida plants made last summer by Prof. Hitchcock is now being made into sets for distribution.

The warm weather of last week already shows its influence on vegetation. Maple buds have swollen considerably; indeed, some were found on Feb. 27th from which stamens and pistils were already protruding. Leaves of blue grass have grown several inches. Winter annuals, like *Lepidium*, *Corydalis*, and many *Compositae*, which have remained green through the winter are now growing vigorously, and many herbaceous perennials are putting out new leaves. Some germinating seeds of sweet clover were found this week.

The Fourth-year Class in botany have made the usual collection of twigs of native woody plants, this winter. Most of the collections have been extended

enough to give the student a fairly good knowledge of our woody plants in their winter condition.

Several special students in botany are wrestling with scientific German every Saturday evening, under Prof. Hitchcock. Dr. Pax's *Morphologie der Pflanzen* is used as a text book.

Owing to the present arrangement of hours for laboratory work, two hours together twice a week instead of one each day, the students are able to do much more work in vegetable anatomy. The use of the microtome for making more difficult sections, and additional assistance in the laboratory, also helps to make the work better and easier than heretofore.

J. B. S. NORTON.

## GRADUATES AND FORMER STUDENTS.

E. M. Blachly, Second-year in 1891-2, is announced the first prize winner in the *Pathfinder's* current history contest.

Sarah Cottrell-Wright, '94, writes from her home in Jennings, La., of a foot of snow and good skating in that part of the sunny south, greatly to the surprise of the natives.

W. J. Yeoman, '93, has found it impossible to evade Cupid's alluring chains, and his marriage to Miss Taylor at Emporia is announced. Mr. and Mrs. Yeoman are both students at the State Normal School, and will finish the course in June.

The Guthrie (Oklahoma) *Leader* says: "Harry B. Gilstrap '91 will brush the dust of dull legislative work from his shoes today and go to Chandler to renew acquaintances with home folks and breathe country ozone. Harry is editor of the *Chandler News*, and one of the bright and accommodating young men connected with the Legislature."

W. E. Smith, '93, reads a paper next Saturday before the Riley County Teachers' Association at Randolph on "Methods in History, and Its Relation to Other Studies;" T. E. Lyon, '93, is one of the editors of the Society paper; Walter Harling, '94, talks on "Exercise for the Teacher and for the Pupil;" Bertha Spohr's paper treats of "Efforts Towards Clear Aims in Education," Jennie R. Smith, '94, and Grace Wells will read papers, titles not stated in the published program.

## Notes from the Farm.

Mr. G. B. Brown of Fredonia, adds four ewes and one ram to his flock this week from the College Shropshires.

The feeding experiments with pigs are among the interesting things at the barn now. The lot of four that was started in the ration of cotton-seed meal and corn meal have all succumbed to the deadly effects of the cotton-seed meal. One pig survived only twenty-three days from the beginning of the experiment; two, thirty seven-days; and the fourth, fifty-six days. The average weight of the pigs was something less than fifty pounds. Each pig was receiving about eight ounces of cotton-seed meal a day, mixed with three times this amount of corn meal. No signs of sickness could be seen up to within a day or two of the death of the pig, but examination of the corpse would show a severe case of inflammation of the lungs and bowels. Although they did not relish the feed, they made about twice the gains of lots fed on corn meal, corn meal and wheat, or wheat. The experiment will be continued with mature hogs to see if the cotton-seed meal is suitable for feeding the last two or three weeks of the fattening period.

The experiment comparing corn, Kaffir corn, and wheat will be closed the middle of the month. The corn-fed lot and wheat-fed lot are running a very close race, but the Kaffir-corn lot has made 19 per cent less gain than these. For the last two weeks the wheat-fed lot made a gain of 2.8 pounds per head a day.

The late rain has put the ground in fair condition for oat seeding. The experiment of seeding at different dates will be continued this year. The seeding commenced March 1st and will continue at intervals of eight days down to May 3rd. Although last year was an off year for early seeded oats, we are still in favor of seeding as soon after the first of March as possible. As a general thing there is more to be gained than lost, by this. To the question, "How's your wheat?" that has been asked so many times the past week, we have replied, "All dead." All the experiments were seeded with Currell, and this variety shows very little signs of life at present. In the list of fifty in the variety test, several seem to be but little injured, but the greater number are dead. The Turkey makes a remarkably fine showing, and the Zimmerman is but little damaged. Most of the injury was done by the dry weather and early freezes in the fall.

To any one that thinks of planting extensively of the new fodder plant Sacaline, (*Polygorsium Sacalinense*) I would say, go slow. Last summer's experiments indicate that it lacks considerable of what is claimed for it. Two dollars a dozen was paid for the roots to plant. The plants made a very slow growth, and the slightest frost would nip them to the ground, and about half of the plants survived the dry summer and made a growth of a foot and a half. At the same time sorghum in the same field seeded in wheat stubble made a large crop of forage. The coming summer the Sacaline will be given further test.

Another season's experiments with the Flat Pea (*Leathyrus Silvestris*), makes us able to say with more confidence that the farmer is fooling away his time in trying to raise this plant.

F. C. BURTS.

## FARMERS' INSTITUTES.

## Held Under the Auspices of the Agricultural College.

Institutes will be held at the places and dates as stated below, and the College will be represented at these institutes by the members of the Faculty named;—

Oak Grange, Shawnee County, March 6th and 7th; Prof. Walters and Mr. Sears appointed.

Garnett, Anderson County, March 7th and 8th; Prof. Georgeson and Secy. Graham appointed.

Pleasanton, Linn County, March 7th and 8th; Professors Mayo and Will appointed.

## Last Week's Meetings.

## INSTITUTE AT CHERRYVALE.

A very successful institute was held at Cherryvale, Montgomery Co., the 21st and 22nd of February, at which Professors Popenoe and Georgeson represented the College. The president of the institute, Mr. B. F. Moore, deserves much credit for his arrangement of its affairs. During the first day, excellent papers were read by the following: J. E. Whitman on "Poultry Raising;" Mrs. B. F. Moore on "Butter-making;" Mrs. A. B. Clark on "Apple Growing vs. Wheat Growing." The papers of these two ladies deserve special commendation. Mrs. Moore told her audience, in her very practical paper, how to make first class butter under the many difficulties encountered on farms where ice and special conveniences cannot be provided, and Mrs. Clark of Independence discussed, in a logical and interesting manner, the relative profits to be derived from apple and wheat in a series of years, giving actual figures from several noted orchards, and proving conclusively that the orchard was the more profitable. Mr. E. Sherill discussed the cultivation of corn, and Mr. J. E. Wetzel set forth the value of rotation of crops. Thursday evening Professor Georgeson addressed a large audience on the subject of "Maintaining the Fertility of the Farm." C. C. G.

## AT HAVEN.

A Farmers' Institute held at Haven, Reno County, February 21st and 22nd, contained all the elements of a successful institute. Enthusiasm, good papers, lively discussions, and good attendance, characterized the meetings, which ended with an intention to make the institute an annual affair. A model paper was presented by Mr. Jas. Frazer, on "Hog raising," containing carefully prepared figures as to cost and giving directions for care. "Chickens" and "Sorghum" each provoked a lively discussion. "Irrigation" was discussed in a well written paper by Mr. E. F. Gilmore, a successful farmer, also by Mr. J. W. Sprew. "Pumps and Power," having a bearing on the subject, was presented by Prof. Hood. The dairy interest was quite prominent, as a very successful creamery is maintained at Haven. The experience of Mr. C. W. Peckham in subsoiling provoked a lively interest, and the belief that it was "the thing" was strengthened by the very interesting illustrated lecture by Prof. Hilton of Topeka, on "The relation of water to soil." Mr. F. C. Burtis presented a paper on the "Wasted Third of the Corn Crop," which started a general discussion of the fodder question. O. P. H.

## A Doctor's View of Agricultural Education.

What think you, will it pay a young farmer who possesses little else but his life, to strive for a college education? Should it be at an agricultural college, if, in his position, it would cost a little more than at a certain other? A. S. Edgerton, Kas.

Yes, it will pay a young farmer or an old one, either, to get a college education in a good agricultural college. "Knowledge is power," and more than "one horse power," too. It can make two ears of corn grow where but one grew under the dull eye and unskilled hand of ignorance. Knowledge is a great money-coiner, a bread-winner, a home-maker and farm-buyer. It is knowledge that makes the foreman worth more than the mere laborer. It brings the lawyer great cases and large fees. It helps the merchant to get the utmost out of his merchandise and the market. It helps the soldier to win battles and the doctor to save life. To the farmer, the agricultural college is far and away a head of the mere literary college. Latin nouns and Greek verbs and the dative case are of little value to the farmer. But the chemistry of soils and crops is all-important. The chemistry of fertilizers will enable him to make a sick soil well by supplying the missing element, and insure a profitable crop where otherwise almost certain failure would be his lot. Just as a better knowledge of the market by one merchant over another makes him rich, so the knowledge of crop production of one farmer will make him rich while his neighbor with less of it is doomed to scratch a poor man's empty noddle all his days. Yes, if you are a farmer, go to Manhattan and take a course in practical and scientific farming. It is science that wins the battle for man while he pockets the proceeds, if he only knows how to apply the principles of science to his calling.—Henry W. Roby, M. D., in *Kansas Farmer*.

The National Educational Association will hold its session next summer at Denver, Colorado, July 9-12. Preparations are already being made by the local authorities, with the view of making this meeting the largest and most successful in the history of the association. All railroad lines will give reduced rates.



## "BREAD FROM STONES."

(Continued from page 102.)

used; if these constituents can be more cheaply applied in the concentrated form of super-phosphates, potash salts, kainite, gypsum, marl, etc., then these will continue to be used as in the past. There certainly can be no special value in the inert material of granite and other rocks, even if soils have been formed from them. We have sufficient inert matter in our soils now; only the soluble substances of a fertilizer are of value. It would seem improbable that rocks would be found which would be rich enough in soluble substances to make them valuable as fertilizers except in unusual cases. Experiment alone can determine this. The promoters of Hensel's doctrines in this country realize this, and with all the emphasis of italics declare that the Hensel fertilizers "do not consist merely of powdered rock or stone." \* \* \* but these form only a considerable component of the same, other ingredients being added in accordance with the ascertained mineral constituents of the produce for which they are intended to be used." This "gives away" the case. The defects of stone meal alone are made good by the time-tried plan of putting in "other ingredients" of known value. In fact, the stone meal fertilizer seems to be modelled after the well-known stone soup, with this difference, however, that, if proper rocks be taken, they will undoubtedly yield some valuable elements to the crop, but they certainly cannot compete with the concentrated commercial fertilizers.

To summarize, Hensel is an enthusiast who has several good ideas worthy of careful consideration, but he has cumbered them with such a mass of speculation and inaccuracy that his book would be likely to be highly misleading to one who had not previously grounded himself on the well-established facts of plant nutrition.

## The Weather for February, 1895.

BY C. M. BREESE, OBSERVER.

A cold, cloudy month; long to be remembered because of the severe blizzard which raged from the morning of the 6th to that of the 7th, culminating on that morning in the severest cold of the winter,  $-15^{\circ}$ . The cold spell ushering in the month and lasting until the 15th is one that has seldom been exceeded in this locality; and yet with the exception of the day of the blizzard it was pleasant almost all the time, there being but little wind. The cold, with the dry weather preceding it, has been very injurious to wheat, especially the soft varieties. The Russian and other hard varieties have stood the weather better, and with favorable conditions from now on may be all right; but most fields of soft wheat are so badly killed as to be worthless. The outlook for a peach crop this year has also vanished, most of the fruit buds being reported killed.

**Temperature.**—The mean temperature was  $24.89^{\circ}$ , which is  $5.16^{\circ}$  below normal. There have been thirty warmer and five colder Februaries in the period covered by our record; the warmest being  $40.37^{\circ}$ , in 1882, and the coldest,  $21.5^{\circ}$ , in 1879. The highest temperature was  $71^{\circ}$ , on the 24th; the lowest,  $-15^{\circ}$ , on the 7th, a monthly range of  $76^{\circ}$ . The greatest daily range of the thermometer was  $38^{\circ}$ , on the 20th; the least,  $9^{\circ}$ , on the 14th. The warmest days were the 24th and 27th, the mean temperature for each being  $53.25^{\circ}$ ; the coldest, the 7th, the mean being  $-6.5^{\circ}$ . The mean temperature at 7 A. M., was  $17.86^{\circ}$ ; at 2 P. M.,  $33.86^{\circ}$ ; at 9 P. M.,  $23.93^{\circ}$ . The mean of the maximum thermometer was  $37.53^{\circ}$ ; of the minimum,  $14.18^{\circ}$ , the mean of these two being  $25.85^{\circ}$ .

**Barometer.**—The mean pressure for the month was 29.006 inches, which is .166 inch above normal. The maximum was 29.495 inches, at 7 A. M. on the 7th; the minimum, 28.425 inches, at 2 P. M. on the 28th; a monthly range of 1.07 inches. The mean at 7 A. M. was 29.027 inches; at 2 P. M., 28.981 inches; at 9 P. M., 29.01 inches.

**Cloudiness.**—The per cent of cloudiness was 50, which is 6 per cent above normal. The per cent of cloudiness at 7 A. M. was 67.86; at 2 P. M., 57.14; at 9 P. M., 25. Three days were entirely cloudy, two were five-sixths cloudy, six were two-thirds cloudy, seven were one-half cloudy, four were one-third cloudy, three were one-fifth cloudy, and three were cloudless.

**Precipitation.**—The total fall of rain and melted snow was 1.39 inches, which is .31 inch above normal. The total snowfall was 2.05 inches. The weather from the 8th to 14th, inclusive, was quite unusual. Only three-tenths of an inch of snow fell during this time, but each day there were snow flurries, and threatening weather prevailed. The fine slow rain of the 25th and 26th, amounting to 1.11 inches, did much good, grass and wheat greening up quite perceptibly immediately afterwards.

**Wind.**—The wind was from the north twenty-four times; south, fifteen times; northwest, twelve times; southwest, ten times; east, six times; west, six times;

southeast, six times; and northeast, five times. The total run of wind for the month was 6562 miles, which is 555 miles below the average. This gives a mean daily velocity of 234.35 miles, and a mean hourly velocity of 9.76 miles. The highest daily velocity was 527 miles, on the 6th,—the day of the blizzard,—and the lowest, 81 miles, on the 22nd.

The following table gives a comparison with preceding Februaries:—

February.	Number of Days.	Rain in inches.	Per cent of Cloudiness.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858	7	.46	49	...	25.49	71	-1	...	...	...
1859	2	.61	49	...	32.25	63	-5	...	...	...
1860	4	1.84	33	SW	33.74	64	-6	...	...	...
1861	0	.00	35	NW	33.70	68	-9	...	...	...
1862	1	.02	51	N, NW	24.54	54	0	...	...	...
1863	7	2.70	56	N	29.72	53	-4	...	...	...
1864	4	2.41	...	...	34.68	58	13	...	...	...
1865	3	2.01	46	N	31.70	57	-2	...	...	...
1866	3	.18	32	SW	29.39	69	-6	...	...	...
1867	5	1.17	58	NW	30.27	65	-4	28.74	29.25	28.30
1868	0	.00	37	SW	33.68	69	-3	28.69	29.10	28.10
1869	6	2.48	49	SW	35.86	71	3	...	...	...
1870	4	.48	50	NW	32.27	66	-10	...	...	...
1871	2	.30	47	SW	30.50	66	-4	...	...	...
1872	4	1.05	59	SW	25.27	48	-2	28.78	29.24	28.10
1873	4	.87	51	SW	22.50	63	-10	28.78	29.40	28.14
1874	2	.65	39	SW	36.96	69	-4	28.81	29.32	28.26
1875	5	.91	50	SW	39.59	65	16	29.01	29.40	28.40
1876	5	1.44	58	SW	39.09	68	6	28.65	29.13	28.23
1877	2	.75	38	SW	21.50	58	-14	28.84	29.42	28.29
1878	1	.05	32	SW	36.78	67	4	28.57	29.09	28.02
1879	3	2.75	52	SW	22.55	47	-13	28.63	28.98	28.23
1880	2	.42	41	SW	40.37	69	7	28.65	28.90	28.14
1881	4	1.75	45	NW	25.76	65	-17	28.88	29.40	28.09
1882	3	.58	46	SW	26.01	63	-6	28.76	29.12	27.97
1883	5	.55	43	SW	21.57	60	-18	28.58	28.96	28.06
1884	4	.35	40	SW	31.42	69	-7	28.94	29.48	28.08
1885	6	1.18	58	NE	27.84	72	-9	28.98	29.59	27.90
1886	5	2.67	41	...	32.12	71	-4	29.05	29.75	28.44
1887	3	.54	30	...	25.53	64	-10	29.15	29.80	28.47
1888	5	.24	46	N, NW	29.97	70	-5	28.95	29.48	28.44
1889	2	.84	25	N	27.56	68	0	28.88	29.41	28.16
1890	5	2.95	44	SW	34.64	64	12	28.91	29.25	28.23
1891	6	.89	31	N	26.69	55	-6	28.95	29.69	28.31
1892	2	1.10	33	SW	25.38	67	-11	28.99	29.58	28.22
1893	7	1.39	50	N	24.89	71	-15	29.01	29.50	28.43
1894	...	...	...	...	...	...	...	...	...	...
1895	...	...	...	...	...	...	...	...	...	...
Sums	133	38.68	1495	...	1081.8	...	...	692.18	...	...
Means	4	1.08	44	SW	30.05	...	...	28.84	...	...

## WIND RECORD.

February.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1890	5812	207.57	374	74	8.65	28
1891	7675	274.11	581	80	11.42	34
1892	7024	242.20	407	101	10.08	30
1893	7747	276.68	494	99	11.52	33
1894	7884	281.57	768	56	11.73	45
1895	6562	234.35	527	81	9.76	29
Totals	42704	1516.48	3151	491	63.16	199
Means	7117	252.75	525	82	10.53	33

## COLLEGE ORGANIZATIONS.

February 23rd.

When the lights were turned on in the Hamilton Hall Saturday evening a large number of members were found already present. The others were not long in arriving, and an interesting session was soon in progress. The earlier part of the evening was taken up by the program, while after recess an unusual amount of business was transacted. The following program was rendered: Declamation, J. C. Wolcott; essay, Stanley Robbins; discussion, Carl Snyder; instrumental music, J. Poole. Debate, "Resolved, That the interests of the four college societies would be best subserved by having one joint Annual Exhibition rather than by four individual exhibitions each year." Affirmative, C. V. Holsinger and J. M. Wheeler; negative, E. B. Coulson and J. W. Williams. Current news, G. C. Hall. Select readings, H. W. Rogler and C. M. Ginter. Discussion, H. M. Thomas. W. L. H.

February 23rd.

Promptly at 7:30 the Webster Society was called to order by Pres. Morse. J. V. Patten led in devotion. Debate on the question, "Resolved, that the railroad pass system should be abolished." R. W. Bishoff and G. C. Wheeler on the affirmative, argued that officials and politicians have come to regard the pass as a part of their salary, and if they do not get one they will legislate against railroads, and if they do get one they will legislate in favor of the railroads; and since these passes act as bribes the system should be abolished. Messrs. Zimmerman and Strawn, on the negative, argued that the receiving of a pass does not prejudice officials in favor of the railroads, as legislation was still for the people who elected them. The pass is merely a friendly treat by the railroads to friends. Decision in favor of the affirmative. A well written essay by C. C. Jackson entitled "Special and General Education" was well received by the Society. "A Fragment," a declamation delivered by A. G. Wilson, showed a touch of the ridiculous. J. F. Brown read an interesting article, which was followed by a declamation, "Calling up a Boy in the Morning," by Wm. Langraff. An interesting number of the Reporter, edited by W. H. Steuart, contained some sound advice besides reports from the College Social and Oratorical Contest. Under discussion, C. E. Willy presented "The Origin of the North American;" F. H. Day, "Duties and Privileges of the Fourth-years." The Society listened to an interesting report of the Oratorical Contest from Ed. Webster, until the fast dimming lights compelled a hurried adjournment. L. W. H.

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

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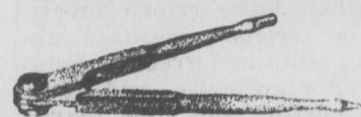
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The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



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### HIGHER INSTITUTIONS: A CORRECTION.

BY PRESIDENT GEO. T. FAIRCHILD.

"THE recent 'fee' agitation of the State University and the large number of new normal bills introduced have led to an investigation of what each educational institution is costing the State. The figures below are interesting.

"Amount received from the State for fiscal year ending June, 30, 1894—Normal, \$24,926.33; University, \$95,371.95; Agricultural College, \$32,194.81.

"Average number of students—Normal, 1,356; University, 833; Agricultural College, 587.

"Number of teachers—Normal, 22; University, 50; Agricultural College, 41.

"Average number of students for each teacher.—Normal, 61; University, 16; Agricultural College, 14.

"Average cost to the State for each student—Normal, \$18.40; University, \$114.49; Agricultural College, \$54.67."

The above statement, extensively circulated, contains both misstatement and misrepresentation, so far as the State Agricultural College is concerned. The number of teachers at the State Agricultural College, including foremen of farm, garden, and shops, and all officers of the Experiment Station, has never been more than 38, and 12 of these have nothing to do with teaching. Of the 26 remaining, six are responsible officers in the Experiment Station, where one half their duties are performed. The division proper, then, should be 23 instead of 41 to show the relation of teachers to students.

As to the expense for each student, all depends upon the character of the education given. The more advanced the work done, the more expensive the apparatus and teaching everywhere. If it were not so the State Normal teaching should cost no more than the teaching in the common schools. The State Normal School has an enumeration of 1335 students, of whom all but 389 are below the second year in the course, or in the model school, and studying only such branches as are taught in all the public schools. Moreover, only 20 or 30 students are reported to be taking a four years course, so that only about 350 of the students are in classes for the two years requiring genuine advanced teaching. Still further, little of the work at the State Normal School is in the special sciences where most of the work required in the State Agricultural College lies. Such scientific training requires more apparatus, more laboratory oversight, and so more hours of personal contact with students than any of the ordinary teaching. The same fact must be noticed of all technical training in farming, gardening, wood-work, iron-work, sewing, cooking, and dairying, in which the State Agricultural College has at least twenty-five classes to provide for.

As to the attendance upon various State Institutions much misapprehension exists. The catalogues for 1893-4 show the following:—

	Total.	In Common School Studies Special Schools	In Higher General Courses.	Graduates From Four Years Course.
<b>State Institutions—</b>				
University.....	691	258	433	49
Normal School.....	1335	946	389	13
Agricultural College.....	555	90	465	39
<b>Other Colleges</b>				
Baker University.....	504	282	222	16
Wesleyan University.....	332	260	72	7
Washburn College.....	264	103	161	13
College of Emporia.....	89	19	70	13
Bethany College.....	440	371	69	4
St. Johns and Sisters of Bethany	215	151	64	5
Ottawa University.....	355	192	163	12
McPherson College.....	312	251	61	7
Lane University.....	130	107	23	3
Midland College.....	116	39	77	8
Highland University.....	88	56	32	5
	5426	3125	2301	194

The above table gives some criterion for comparing the principal institutions of the State with reference to their influence upon the general intelligence. As the State Agricultural College has essentially but one course of four years for all students, its record of attendance is comparatively high, entitling it to the repute it has gained throughout the country as the largest college of its kind. In comparison as to equipment and work accomplished for the means furnished, it is second to few institutions of any kind. Its rank in the State is easily seen from the table.

### THE ECONOMY OF DRESS.

BY MRS. E. E. WINCHIP.

TRUE economy does not consist in the buying of an article because it is cheap; the first thought should be, Is such a garment needed? If it be a dress, the color must first be decided upon, choosing one that is becoming; and if a serviceable common

dress is what is needed, select something that the bright Kansas sun will not fade the first time it is worn, and something suitable for the time and place it is to be used. There are so many pretty goods that one has a broad field from which to choose. If the garment is to be of woolen goods, and has to be made to last more than the one season, let it be of the plainer goods, as the fancy novelties so soon go out of fashion, and are not so easily turned and made over.

All-wool goods will cost more than wool and cotton, but the linings and work to make it will be the same; and woolen goods, even the most delicate shades, can be washed and pressed to look as well as new, while cotton and wool can seldom be turned and made over, and fades much more quickly.

Good dress linings are so cheap that there will be only a few cents difference between the good and inferior quality, while a dress made over a good lining wears longer, will keep its shape better, and look much prettier.

On making a dress, care should be taken to select a style suitable to the wearer; and if a dress is worth making, it is worth making well. It is just as easy to cut the seams true and even, tracing them so that both sides are exactly alike, and to baste it so that all of the waist lines will match; for any variation will make it twist to one side. Make it so well that the wearer may feel a sense of comfort in putting on the dress.

In making over garments, care should be taken that materials to be put with the old dress do not cost more than new goods. With a little care and thoughtfulness, one can combine two garments in one, making something very pretty and stylish.

Economy in dress means careful selection of materials, making them up neatly, and taking proper care of one's garments. A dress is not complete unless it has its loops by which it can be hung in the closet. A garment will soon tell the tale whether it is properly dusted and hung up after wearing or thrown on the first convenient chair.

One may catch a dress and break only a few threads of the goods, but if left it is more easily caught again; the result is a large tear. A few stitches taken at once with a raveling of the goods makes repairs invisible. The good old maxim, "A stitch in time," is well worth remembering, and if one would follow it closely it would save many a dollar, and we would not see so many pins used in holding together different parts of clothing which should be properly sewed.

### SACALINE.

BY PROF. C. C. GEORGESON.

MANY inquiries suggest the propriety of recounting our experience with this new so-called "forage plant," which is being so widely advertised by seedsmen during the present season.

This plant was called to our attention a year ago by the reports of a French experimenter which was partially reprinted in one or two of the leading agricultural journals in America. He called attention to the extraordinary growth of this plant, which he estimated, on the basis of a very few specimens, to have yielded as much as 180 tons of green forage per acre in one season, and that cattle to which it had been fed ate it with avidity. It was noted, however, that it grew on rich, moist soil, and it evidently had plenty of room and good culture.

The plant reported on by the Frenchman was said to be from the island of Sachalin in the sea of Okhotsk, north of the Japanese group, and was a wild species of the Buck-wheat tribe, *Polygonum Sachalinense*. It is to be noted that its home is in a cold, moist climate, where the winters are extremely severe, the rain fall heavy, and the atmosphere at all seasons moist. It is also listed among the 34 distinct species of *Polygonum* found in Japan, the conditions here as to moisture being the same as further north, though the temperature is more moderate.

A plant of such extraordinary productive powers as stated in the French report, with possibilities for usefulness as a forage plant, deserves to be investigated. We therefore procured a dozen plants from Pitcher & Manda, a nursery firm of Short Hills, N. J., and planted them out in April last. The plants, or rather roots, started to grow promptly, but a late mild frost killed the shoots to the ground, after having reached the height of six to nine inches. One-half of the plants did not start to grow again; the remaining



six sent up feeble sprouts which reached a height of 18 to 20 inches before the severe drought of the past season set in, in the latter half of July. When the hot, dry weather came they ceased to grow, lost their leaves, and apparently succumbed completely.

This is the brief history of one season's trial at this station with the much-talked-of, over-advertised "sacaline." The results do not hold out much promise of enormous yields of palatable and nutritious green fodder, which most seed catalogues would lead us to believe this plant will furnish. On the contrary, it seems to be entirely unsuitable to the dry, hot climate of the Western States, and the facts as to the climatic conditions of its native habitat would seem to explain its behavior here. One point difficult to understand is why a plant which has its home in Siberian latitudes should be so sensitive to a very slight frost, as ours proved to be. It leaves room for the suspicion that we may not have had the genuine article, but instead a tender species from some southern region. We have recently procured seed from two distinct sources in order to give the plant another trial; but I have but little hopes of more favorable results than last season. Whatever it may do in moist climates, I do not believe that a plant from that region can be of any signal value as a forage plant in a dry, hot climate like ours. The seed is imported from Japan, and is costly; and I would advise those farmers who have been prepossessed in favor of this plant by the extraordinary statements in seed catalogues, to await further developments before they invest much money in it. Should further trials show it to be a good thing, it will be time enough to get a start in it.

I may add that while in Japan some years ago, I frequently saw a coarse species of *Polygonum* growing in the volcanic sand and scoria in gulches and mountain valleys. It corresponds to the description given of this "sacaline." It is a coarse weed six or eight feet high, and would be one of the last things a farmer would pick out as a forage plant, and if it had any value as such the Japanese themselves did not know it. Whether it was *Sachalinense* or some allied species I am unable to say, but I suspect that it is the plant which furnishes the seed now being sold here under the name of "sacaline."

#### The Country Road Problem.

The present system of paying highway taxes, figuratively designated as "working them out," is admittedly bad and can be easily remedied, but an attempt to make a change in this direction would undoubtedly meet with opposition, hence I have avoided discussing that subject, preferring to let the several propositions stand alone and be discussed and considered on their respective merits. The subject of good roads has received so much discussion in the public press lately, and there seems to be such a uniform consensus of opinion that something must be done in this direction, little more remains to be done than to devise some general plan which shall not only be feasible but generally acceptable. Good roads mean a great deal more than mere convenience. They mean more than saving money, which, however, is a matter of no small importance. They mean a more intimate relationship between the city and country people to the mutual advantage of both. They mean that living in the country for six months in the year shall not be practical isolation.

Poor roads keep the farmer and his family at home at that season of the year when they have the most leisure, when time hangs heavily, when it could and would add to their enjoyment socially, and advantage educationally, if a frequent drive to the town or city, or a visit among the neighbors and friends living at a distance of a few miles could be taken.

The longing of many young men and women to escape from the farm is largely traceable to the isolation caused by the mud embargoes. Good roads mean better prices for the farmers located a few miles away from the market town because the present condition of the highways compels the marketing of the products of such farms at the times when the roads are good and the market prices usually lowest. Good roads would permit the average purchaser of farm produce living in towns and cities to buy his stock of such articles at a lower price than at present.

Indeed it seems to me that no more important topic in a financial and social way has of late engaged the attention of the public. If, then, this subject is of such prime importance, the necessity of moving with great care will be apparent. As indicated above, it seems to me wisest to commence with a system of country roads branching out from the county towns, ultimately to extend from county seat to county seat. The enterprise being of such general public interest to the people of the whole state, uniformity in plan and entire freedom from local influence in the selection of a route or the acceptance of work done being so important to general success of the undertaking, the making of the plans and the surveys, and in a measure the general superintendence, whose expenses should be borne by the state at large. Subject to the general superintendence of the state engineer, the management of the improvement should be under the control of the county board or other county officials within their respective counties.—C. E. Estabrook.

#### "There's no Place Like Home."

Some philosophic student of the weaknesses of his kind has remarked that in whatever situation a man finds himself, its disadvantages are seen through a magnifying glass, while its advantages are taken as a matter of course, and are unappreciated. On the other hand, whatever situation that a man proposes for himself its advantages are magnified, while its possible disadvantages are minimized. This is largely the secret of the migratory tendency, common enough among the American people. Men having good homes and being on the whole comfortably situated, strike a bad season, either wet or dry, or shiver a little more in the winter than is conducive to comfort, and, forgetting all the advantages of their positions, straightway begin to think of moving on to some locality or section where the particular thing they object to may perhaps be escaped, but in its stead will come a dozen others, any one of which is worse than that from which escape is sought.

There have been a few weeks of extremely cold weather this winter which made the chills run down the spinal column and rendered the feeding of stock and the morning chores the reverse of pleasant. The winter was also preceded by an unusually dry season, causing partial failures in many localities and total ones in some. These are just the conditions calculated to make poor human nature hunt climate, and undergo large sacrifices to secure it—just the circumstances to induce men, naturally a little restless, to sacrifice a hundred good features to escape one which tends to their discomfort.

The Garden of Eden has disappeared from the face of the earth, and even its original location is only a matter of the barest conjecture. If it were possible to find a country, or a section of country, that had absolutely no faults, the land would be worth \$1,000 an acre. There are, however, no such sections. We remember not so very long ago, when Florida was described as Paradise; where the opportunities to make fortunes from five to ten acres planted to oranges were represented as covering the entire State. A great many people desiring climate and opportunity to reap these fortunes, migrated from the colder zones, and the result was that last season it was easily possible in the Northwest to swap a peck of good apples of home growth for a bushel of oranges brought a thousand miles or more. Nor is this all. They have cold weather there, and failures of the crops, which form their sole reliance, quite as often as anywhere. During the present winter we have had some cold weather in the Northwest. It has been productive of some discomfort, perhaps, and some slight loss, but in the orange groves of Florida, where climate counts for so much, there being little else to count, and where opportunity for the acquisition of wealth was supposed to exist without limit, and with practically no effort, cold weather has come, and orange growers are reported to have met with what practically amounts to a total loss early in the season. They hastened to put their land into vegetables for northern consumption, when along came the February freeze and destroyed their vegetable crop.

Climate is a good thing, but it is not everything; and there is this special disadvantage about one that is mild, that the occasional severe spells that do come, and are bound to come, are more keenly felt and cause more loss and more suffering than the more constant cold weather of more northerly regions. It is a fact, not generally appreciated, perhaps, but a fact, nevertheless, that the live-stock losses from winter exposure of the southern states amount to an average of more than six times as many as those of the northern states from the same cause. In the winter of 1893-4, for example, while the losses of cattle in Michigan from winter exposure were but one-tenth of one per cent and of Wisconsin, Minnesota, and South Dakota but two-tenths of one per cent, those of Florida were two and one-tenth per cent; Alabama, two and six-tenths per cent; Mississippi, three and one-tenth per cent; of Louisiana, three per cent, and Texas, three and two-tenths per cent. We suppose that the people of the northern States where they have winters are on the average better provided with winter clothing, melton overcoats, etc., than are the people of the South. In like manner, the cattle growers of the northern States provide better shelter and a greater degree of comfort for their cattle than do those of the South, where it is less constantly needed, and, as a consequence, there is among the northern cattle less suffering and less loss.

The same idea governs all the conditions of livelihood. There is something quite attractive about the balmy skies and the mildly tempered atmosphere of a southern climate. That it makes men lazy is undoubtedly true, but this, while an objection from the standpoint of the energy and vigor of the race, is not particularly objectionable from an individual standpoint, since most men do not object to being a little lazy for themselves, if they are living under conditions where they can stand it and live. But from the standpoint of individual comfort alone, there is the serious objection that the departures from the normal, which every now and then occur, are more trying and more severely felt than even much more severe conditions to which one is habituated. In the Northwest one can, by foresight and provident precaution, practically make his own climate and conditions for himself and family and for his live-stock. It only requires provision for the expected. In the milder climates referred to, continued comfort requires a much higher degree of wisdom. It requires provision for the unexpected.

What has been said is not said with a view of depreciating the sections of country that have been used as illustrations. We do not single them out as being especially disadvantageous countries for the

people of the Northwest to exercise their migratory inclination upon. Our purpose, rather, is to remind the reader, especially if a little restlessness and discontent has followed his experience of last season and the present winter, that there is no place like home; that its advantages far outweigh its disadvantages, and that when, its resources, its comforts, and its privations are fairly measured up against those of other sections, a balance struck, will be found to be largely in favor of home.—*Live Stock Indicator*.

#### The Inspiration of Spring.

The premonitions of the opening season are at hand, and the glorious weather of the past few days gives us a foretaste of its pleasures and inspires us with its hopes. The sun shines with a new brightness; the air is mild and balmy; the freshly turned earth has a sweet savor, and is, thank Heaven, wet with the slowly melted snows of winter, and moisture just now counts for much; nature is awakening from her lethargy, and is taking on the activity of seed time, which is the fore-runner of harvest, and hope springs up, renewed, as the first tiny blades of grass appear.

Hope counts for much, too. While it is true that we cannot live on hope alone, it is equally true that we cannot live without it. The approach of spring brings it, and it brings, also, to the courageous heart a species of encouragement that nothing else can give.

Belief in himself, in his own powers and resources, in the resources of nature and the providence of the Lord, revive and strengthen in the heart of every man, whose spirit is not wholly broken, as nature awakens from her winter sleep and the breath of spring enters his nostrils and fills his lungs.

The discouragements of the past two years have been very great; adverse business conditions have caused the farmer's profits to diminish steadily, even to the vanishing point, in almost all branches of farming, and to this was superadded last year an adverse season which resulted in a total or partial failure of crops in many parts of the country. It seems an age since the soil has done its whole duty; the promise of seed time and harvest appears to the despondent farmers to have been only half kept, and that, too, only the first half, expensive in outlay of time, seed and labor, while the last, which should have brought the reward, remained unperformed.

Small wonder, then, that discouragement should have been felt, nor does it indicate any lack of manliness, if, during the gloom of winter, courage should flag a little. But, as the busy season approaches, when the moist earth warms under the influence of the rays of a stronger sun and the furrows of the late plowing lie invitingly open to the harrow, with a promise of response to good tilth; when the buds are on the point of swelling and the herbage timidly peeps forth to find the winter gone, the farmer is inspired with renewed courage, renewed confidence, and to renewed effort.

It is well that it is so, or effort would cease and success as well. Happiness, it is said, comes from within and not from without; so, too, does success, in a very large degree. Men sometimes fail who thoroughly believe in themselves and their future, though not often, but no man ever succeeded who did not believe in both himself and his future, and in whom confidence in both did not inspire resolute endeavor. Cheerful courage and unwavering faith are much more than half the battle. We look forward ourselves to a successful season during the coming year; we feel the influence of the spring awakening and the tonic effect of nature's earliest endeavor. There seems to be more ozone in the atmosphere, and the blue skies that succeed winter's sombre gray brighten the environment.

The courage with which the tender blade of grass and the swelling bud prepare for the season's work somehow appear to shame one who takes any other than the courageous and hopeful view of the future. Nor are these hopes built upon a sentimental foundation, merely. Grain bins will be empty by the time the next year's crop falls into them. Unless all past experience be delusive, the products of the coming season will bring a remunerative price. Cattle, hogs, horses, sheep, and all the live-stock of the farm have been reduced in numbers to a point much below that of a year ago or of two years ago.

The business horizon, too, is clearing—slowly, it is true, but still clearing,—and as it improves, as improve it must, for the world is not coming to an end; farming and stock-growing conditions, will improve with it, and all the more rapidly because of the light supplies in all lines as compared with the normal demand of prosperous times. The advent of spring stimulates nature, of which we are a part, to the putting forth of all its best efforts, and the prospective business conditions of the country inspire us with the hope and belief that this season these efforts will be adequately rewarded.—*Live Stock Indicator*.

If we were asked to name some one test by which to point out the successful farmer we would probably say if he keeps up or increases the fertility of his farm he may be safely set down among the successful ones. Keeping good the productive capacity of his fields is the final test. A man may so manage as to apparently make money, but if in doing it he robs his acres of their fertility it is only a question of a few years at most before the tide will turn on him. He has been drawing upon his capital—an always unsafe performance. The fertility of his soil is the farmer's capital, and he cannot waste it with impunity. If he wastes, he must suffer in his business as surely as will the banker or merchant, who, living beyond his income, is eating into his capital. Don't do it. Keep the acres fertile. Add to the richness instead of taking from it.



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds a. par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

**GENERAL LOCAL NOTES.**

Many cases of mumps yet prevail among students.

Prof. Popenoe was kept from classes one day this week by sickness.

Mr. H. B. Nichols of Liberal, Kan., visited his son at College yesterday.

Miss Keller, of Hastings, Neb., guest of Bertha Kimball, spent Friday at the College.

Capt. Cavanaugh moves next week into the Hoadley house, corner Houston and Fifth Streets.

A number of musicians met last evening at Prof. Brown's residence to consider the proposed organization of a musical association.

The Annual Exhibition of the Webster Society takes place Saturday evening, the 16th. Rehearsals have been the order for two weeks past.

Hon. R. M. Painter, of Meade, attended by Mrs. Painter, visited their son and daughter at the College this week, after the adjournment of Legislature.

Mrs. W. D. Street, wife of the President of our Board of Regents, made the College a brief visit last week, and promised a more extended one at some future time.

Hon. Nathan Zimmerman, of Olathe, took a recess from legislative work over last Sunday to visit his daughter in College. Mr. Zimmerman has had four of his family among the students at this College.

The Governor has appointed Mr. Chas. B. Noe, of Butler County, to succeed Judge Stratford on the Board of Regents. If Butler doesn't become a famous recruiting station for the College it will not be the fault of the Executive, Mr. Noe being the sixth Regent from that County.

The "Stokes girls," as they are popularly known, rejoice in the arrival of their parents, who will make Manhattan their home for several years, at least. They have apartments at Miss Vail's, on Poyntz Avenue, but will rent a house when they find one to suit. Mr. Stokes travels for a Kansas City implement house.

Signs of spring multiply: the arrival of the early birds in their northern migration, the brief duration of a cold wave, the advent of the small boy with his marbles, the resurrection of ball and bat, the running, jumping, "cavorting" youngsters, and the lastitude—"that tired feeling"—which, in the case of students, makes a grade of 99 plus an impossibility.

The action of the Legislature abolishing the office of State Veterinarian, and authorizing the Live Stock Sanitary Commission to call upon Prof. Mayo for advice will considerably enlarge the Doctor's field of usefulness, with which thought the College must console itself for the many probable absences of a member of the Faculty from local duties.

Mr. Howard H. Darnell, representing E. A. Wright, the Philadelphia engraver and stationer, visited the College on Wednesday and took away with him an order for the Class Day programs and the College's invitations for Commencement, both of which orders will without question be filled to our entire satisfaction. Mr. Darnell is the artist and designer for the house he represents, and the many good sketches he made here, as well as the rapidity with which he worked, gave a hint of his skill, fuller evidence of which was shown by the host of beautiful samples exhibited.

The second division of the Fourth-year Class occupied the public hour Friday afternoon of last week, with orations as follows: "Indian Myths," Lucy Ellis; "Universal Friendship," G. A. Dean; "Training Children," Daisy Day; "Some Evils of Emigration," V. Emrick; "Monks of Gethsemane," Elsie Crump; "Time and a Reputation," E. H. Freeman; "What Nature Teaches Us," Nora Fryhofer; "The Greatest Man in the English Parliament," Geo. W. Fryhofer. A violin solo by Geo. W. Fryhofer and a quartette by Messrs. Patten, Joss, Fryhofer, and Smith were pleasing musical selections.

**GRADUATES AND FORMER STUDENTS.**

Kate Harbord, Third-year in 1893-4, is visiting Mrs. Graham.

R. P. Dickson, student in 1893, writes from Pueblo, Colo., for a statement of work done at this College.

Bessie B. Little, '91, writes from New Haven, Conn., of interesting and profitable study of physical culture.

H. M. Cottrell, '84, Superintendent of Gov. Morton's Ellerslie stock farm at Rhinecliff, publishes a year's record of the Guernsey Cow Bretome under his care. This cow, 10 years old and weighing 1150 lbs., gave

in the year 11,218½ lbs. of milk, containing 602.92 lbs. of butter fat.

Jane C. Tunnell, '89, is elected assistant teacher of the eighth and ninth grades of the Manhattan schools.

H. G. Gilkerson, Third-year in 1891-2, expects to finish his course in engineering at Michigan University next June.

John Stingley, '94, teaches a big school—and the best—no, one of the best in the County—in the Washington district up the Blue.

Emma Secrest, '90, studying at San Jose, Cal., expects to complete her course there for Master of Arts this spring, with English Literature a specialty.

Ava Hamill-Tillotson, '92, writes from Hill City, Kansas, of interesting experience in farm life, while she is carrying on post-graduate study in zoölogy.

News comes from George Doll, Third-year in 1893-4, that he is President of the Pawnee County Library Association at Larned. He writes for library rules and methods of cataloguing in use here, expecting to adapt to his work there such as are suitable. He plans to return next term in order to complete the course in 1896.

News reaches us that Walter J. Towne, Third-year in 1891-2, who is now a member of the graduating class at the Rensselaer Polytechnic Institute, Troy, N. Y., was recently elected as one of six members of a class of thirty to the Society of Sigma Xi. This Society is to the scientific course what Phi Beta Kappa is to the classical, its members being chosen for excellency in scholarship, and for showing marked ability for future prominence in a scientific line. The many friends of Mr. Towne wish him future success in his chosen profession, civil engineering.

**Farmers' Institutes.**

AT WASHINGTON.

The farmers' institute of Washington County, held at the court house in Washington on February 28th and March 1st, was very successful in every respect, though the attendance, on account of bad roads, was not so large as might have been wished. The program consisted of over twenty well-prepared papers, and the spirited discussions showed that the audience took great interest in the presented matter. Of all the subjects, those pertaining to subsoiling, soil management, conservation of moisture in the soil, meteorology, and irrigation awakened the greatest interest. Many farmers promised to commence experiments on a small scale in practical irrigation, at least of gardens and family orchards. At the close of the session a permanent organization was effected, a constitution adopted, and officers elected. The annual farmers' institute will be a permanent element in the social and educational life of the farmers of Washington County.

J. D. W.

AT OAK GRANGE.

The Seventh Annual Institute at Oak Grange, Shawnee County, which had been advertised for February 6th and 7th, but had to be postponed on account of a raging blizzard, was held on Wednesday and Thursday of this week, and was one of the most successful ever held in the State. The weather was perfect, the attendance large and enthusiastic, and the program unusually rich. Among the many speakers were Mayor Harrison of Topeka, Supt. Wright of Shawnee County, Prof. Hilton of Topeka, and Editor McDonald of the *Western School Journal*. The addresses of the former three will probably be published in the *Kansas Farmer*. Mr. McDonald told of his many trials, tribulations, and observations during his recent trip to Scotland, "Auld Hame," a tale as amusing as it was instructive. A somewhat unusual feature of the institute was the plentiful basket dinner and supper, served by the ladies in the dining room of the spacious Grange Hall for all who were present. The Agricultural College was represented by Prof. Walters, who spoke on "Gumption on the Farm," and Mr. Sears, who read a paper on "Strawberry Culture." The delegation is indebted to Mrs. H. Buckman for hospitable entertainment at her handsome farm home, and to Mr. Buckman for transportation from and to the Topeka railroad station. The next institute at Oak Grange will be held sometime in December, so as to escape the unreliable weather usually prevailing in February.

J. D. W.

**Education and Manual Labor.**

One error that needs to be remedied is the common one of thinking that it is beneath the dignity of a man with a good education to labor. To wish to rise in the world, to attain competence or a fortune, is right, and the increased opportunities for wealth and position given by education is a proper incentive to place before pupils. But the idea that an educated man should not work with his bone and muscle is a wrong one, and one that does inestimable harm to both the cause of education and the country at large.

The idea that it is less honorable to be a blacksmith, a carpenter, a mason, or a farmer, than a clerk, a lawyer, minister, or doctor, is wrong. And as long as the motive in getting an education is to secure a "soft snap" this will be the case. The true object of an education, that of making better citizens,—better mentally, morally, and physically,—is overlooked. Even if the increased ability of the educated man brought him no money in return, the increased capacity for enjoyment would more than compensate for the outlay of time and means.

The education that makes the farmer, the blacksmith, the carpenter, the mason, the equal of the minister and other professional men in culture and re-

finement, is the true one. The system that makes a fourth-class preacher or lawyer from the material that would have made a first-class blacksmith or farmer is a false one.

The idea of training the mechanics and farmers is a comparatively new one, but if this nation is to keep its present proud position, the boys and girls must be made to see that idleness is disgraceful, and that he who works in a field that is useful to men is the true man.

Education must be practical, but "practical" must be taken in a broader sense than to be immediately convertible into cash. Practicability ought to include everything that makes better and happier.

Of all the institutions in the land that are striving for the betterment of the working people, the State Agricultural College of Kansas stands foremost. Regular manual labor is a part of the course. The arts and sciences that have to do with every-day life and living are foremost. Theory and practice are happily united.

The boy in the machine shop with his grimy hand, the one in the garden in overalls, is the same boy you see in the class room in "store clothes." He is estimated at his true worth, and his ability recognized. The instruction and general influence are such as to refine and elevate the character while they broaden and strengthen it. It is the college for the people.—*Albert Dickens, '94, in the Bushton Star.*

**Protection or Free Trade?**

In his last lecture, Prof. Will discussed international exchange. Under the head of exchange, comes the subject of international trade. Should commerce between nations be free or restricted? We may not answer absolutely and finally for all cases. The progress of civilization is toward the consolidation of small groups into larger, families into clans, those into tribes, and so on through the formation of states, nations, and empires. After the consolidation, trade between the parts is free; before, it may be more or less restricted. While the groups are hostile, it must be restricted. Trade means inter-dependence; and the militant nation can ill afford to depend upon other nations lest its supplies be cut off when most needed; viz, in time of war. Each country must decide for itself what policy is best adapted to its present needs.

As to the United States, the war argument has little force. We are geographically isolated; we have made a unique record as a peace-loving and arbitrating people; at the same time, it is generally understood that the United States can fight if pressed; hence we are not molested. We will, therefore, be influenced chiefly by economic rather than military considerations in deciding this question. The question before us is, "What is good for us today?" There are two parties holding opposite views on this question—one small group believing in free trade, and the other, largely represented in all parties, in restricted trade.

Both make use of some of the same fallacies to prove their cases. Both assume that whatever is profitable for the individual is good for the nation. In discussing free trade between nations, it must be noted that it is not nations, but individuals that produce and trade. One country may be better adapted to the production of certain articles than others are, so each country might produce its specialties and gain by so doing. But if a country produced only one kind of produce, the soil would soon be exhausted. The very nature of the conditions compel diversity. But can congressmen, representing particular states and districts, be trusted to do the diversifying? A king, equally interested in all parts of his kingdom, might do it; but congressmen are not thus equally interested. One says free trade cheapens; another, that protection cheapens; while still another says that cheapness of goods is due to currency contraction.

Our laborers must be protected against the pauper labor of Europe; but the labor of "Free-trade England" is the best paid of any in Europe; while the pauper labor from the protected nations, states of Southern Europe, is imported to America and given the work in preference to American laborers. Many feel that protection makes work. So it does, but is such work as this most profitable socially? The fact that work must be "made" shows that we have on our hands an industrial problem. What shall we do with our unemployed land, labor, and capital? The protective system affords one answer.

Some nations have prospered under restricted trade, while others have prospered under trade comparatively free. The success or failure of a nation is made by a multitude of causes, all operating at once, each in its peculiar way. The resultant of all these forces is seen by many, while but few see all the causes, and each points to the measure he favors or opposes as the cause of the success or failure, as the case may be.

**The Enrolling Girls' Pleasantry.**

The following dispatch from Topeka to the *Kansas City Star* has something of interest for our alumni in the supposition that Phoebe C. Turner, '94, penned the resolutions:—

Topeka, Kas., March 6.—The bill by Senator Cooke, to enroll bills by printing, thus abolishing the biennial enrolling force, was enrolled today and six enrolling clerks, dressed in black, brought it to the Senate.

Miss Phoebe Turner presented the bill to the Senate, and with it a set of resolutions prepared by the women, in which they expressed regret at the success



of the bill which abolished their office and the failure of the much needed legislation.

Reading Clerk Benrich read the resolutions as follows:—

Whereas, A condition, not a theory, confronts the enrolling girls of Kansas, inasmuch as by the passage of a certain bill our presence, our occupation, and our labors are consigned to the tomb; and

Whereas, We realized and felt until now that we were a part of the legislative body of our State, but, coupling the passage of Senator Cooke's bill with the destruction of the bill to teach us how to cook, and the failure to enfranchise our sisters and mothers, has filled our hearts with sorrow and dismay; and

Whereas, The time honored custom of our accompanying our fathers and brothers to the Legislature will be no more, and the passage of this unjust, unappreciative measure having cut us down in the zenith of our glory, and we fearing it will have a tendency to disturb domestic tranquility, we implore our fathers to rescue us from our humiliation and despondency, and ask your sympathy and tears while we consign to you our death warrant neatly enrolled and properly craped; we further ask Him who holds in the hollow of his Hand the destiny of nations and the care of man kind to treat in tender mercy those erring sons of man and strike from the golden good the sins of our Senator Cooke.

The Senate at the time was crowded with spectators, and the members were more boisterous in the appreciation of the joke than at any time at this session of the Legislature.

### College Appropriations.

#### AN ACT.

Making appropriations for buildings and improvements at the Kansas State Agricultural College for the fiscal years ending June 30th, 1895, June 30th, 1896, and June 30th, 1897.

Be it enacted by the Legislature of the State of Kansas:—

SECTION 1. The following sums, or so much thereof as may be necessary for the purposes named, are hereby appropriated out of any money in the State Treasury not otherwise appropriated, to be expended under the direction of the Board of Regents of the Kansas State Agricultural College: For general repairs for the fiscal year ending June 30th, 1895, one thousand dollars; for extending steam heat to the Armory, two thousand dollars. For the fiscal year ending June 30th, 1896: for general repairs, one thousand dollars; new roofs on the Armory and farm barn, one thousand dollars; for painting metal roofs on five buildings, one hundred and fifty dollars; for new floors for Chemical Laboratory, the woodshop, the Armory, and the basement of main building, seven hundred and fifty dollars; for construction of a dwelling for Farm Foreman, seven hundred and fifty dollars; for improvement of grounds, walks, roads, and bridge, five hundred dollars; for cases in museums, herbarium, and laboratories, two thousand dollars; for catalogue cases, tables, and furniture in library, five hundred dollars; for furniture in offices, class rooms and society rooms, three hundred dollars; for inside blinds, seven hundred and fifty dollars; for extension of sewer and silt basin, one hundred and twenty-five dollars; for pumps and pump pit, three hundred and forty-five dollars; for coal pit and roof extension, four hundred dollars; for paving boiler house, one hundred dollars; for covering steam pipes in boiler house and engine room, one hundred and seventy-five dollars; for two new boiler fronts, one hundred and fifty dollars; for one boiler, two hundred and fifty dollars; for furnishing woodwork in boiler house, one hundred dollars; for blow-off drain, one hundred and ten dollars; for increase of radiating surface in four buildings, one thousand five hundred dollars; for electric lights, five hundred dollars; for telephone system between offices, one hundred dollars. For the fiscal year ending June 30th, 1897: for general repairs, one thousand dollars; for covering main steam pipes, one thousand three hundred dollars; for walks, roads, and bridge, three hundred dollars.

SECTION 2. The Auditor of State is hereby authorized to draw his warrants upon the Treasurer of State for the purposes and amounts specified in section one of this act, or so much thereof as may be necessary to liquidate any indebtedness or obligations contracted in accordance with the provisions thereof.

SECTION 3. This act shall take effect and be in force from and after its publication in the official State paper.

#### AN ACT.

Making appropriations for library, apparatus, and incidental expenses of the Kansas State Agricultural College, for the fiscal years ending June 30th, 1896, and June 30th, 1897.

Be it enacted by the Legislature of the State of Kansas:—

SECTION 1. The following sums, or so much thereof as may be necessary for the purposes named, are hereby appropriated out of any money in the State Treasury not otherwise appropriated, to be expended under the direction of the Board of Regents of the Kansas State Agricultural College: For the fiscal year ending June 30th, 1895: for two hundred military uniforms, fifteen hundred dollars.

For the fiscal year ending June 30th, 1896: For books for the library, one thousand dollars; for addition to the natural history museums, two hundred dollars; for machinery and tools in iron shop, one thousand dollars; for bench tops in woodshop, one hundred dollars; for farm implements, two hundred and fifty dollars; for models and patterns in the Department of Industrial Art, one hundred dollars; for charts and illustrations in the Department of History, fifty dollars; for freight and hauling of coal, one thousand five hundred dollars; for water supply, five hundred dollars; for salary of Loan Commissioner, three hundred dollars; for incidental expenses in care of funds, one hundred and fifty dollars.

For the fiscal year ending June 30th, 1897: For books for the library, one thousand dollars; for additions to the Natural history museums, two hundred dollars; for farm implements, two hundred and fifty dollars; for models and patterns, Department of Industrial Art, one hundred dollars; for freight and hauling of coal, one thousand five hundred dollars; for water supply, five hundred dollars; for salary of Loan Commissioner, three hundred dollars; for incidental expenses in care of funds, one hundred and fifty dollars.

SECTION 2. The Auditor of State is hereby authorized to draw his warrants upon the Treasurer of State for the purposes and amounts specified in section one of this act, or so much thereof as may be necessary to liquidate any indebtedness or obligations contracted in accordance with the provisions thereof.

SECTION 3. This act shall take effect and be in force from and after its publication in the Statute book.

Bills were also passed regulating the sale of College lands and amending laws relating thereto, and for the appropriation of interest received from the permanent fund.

### COLLEGE ORGANIZATIONS.

*Student Editors* — T. W. Morse, G. W. Fryhofer, Maud E. Kennett.

*Hamilton Society*.—President, C. A. Johnson; Vice-President, W. L. Joss; Recording Secretary, C. E. Pincomb; Corresponding Secretary, W. L. Hall; Treasurer, M. L. Heckert; Critic, B. W. Conrad; Marshal, A. W. Staver; Board of Directors, R. J. Barnett, C. S. Marty, G. C. Hall, J. Poole, L. G. Hepworth. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

*Alpha Beta Society*.—President, J. B. S. Norton; Vice-President, Gertrude Havens; Recording Secretary, R. W. Rader; Corresponding Secretary, Nora Fryhofer; Treasurer, A. C. Havens; Critic, A. E. Ridenour; Marshal, E. P. Smith; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

*Ionian Society*.—President, Ethel Patten; Vice-President, Ada Rice; Recording Secretary, Gertrude Stump; Corresponding Secretary, Myrtle Hood; Treasurer, Emma Finley; Marshal, Hope Brady; Critic, Florence Corbett; Board of Directors, Laura McKen, Flora Day, Mabel Selby. Meets on Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

*Webster Society*.—President, T. W. Morse; Vice-President, F. E. Rader; Recording Secretary, J. B. Dorman; Corresponding Secretary, E. G. Gibson; Treasurer, W. B. Chase; Critic, W. H. Steuart; Marshal, J. R. Henrey; Board of Directors, G. C.

Wheeler, C. D. McCauley, F. E. Uhl, F. R. Jolly, E. B. Patten. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

March 1st.

The Ionian Society was called to order at the usual time by President Patten. Maud Kennett led in devotion. Miss Lock was initiated. In the absence of critic, Daisy Day was appointed. The program opened with a banjo duet by the Misses Secrest and Cotton. An amusing oration on "Shadows" was given by Mary Norton. Instrumental duet by Misses Helder and Leicester. A vocal solo by Mabel Gillespie, accompanied by Lottie Eakin on the piano, was followed by a good oration from Maggie Carleton. Amelie Pfeutze entertained us with a vocal solo. Flora Day, the committee on extemporaneous speaking, had a number of interesting topics discussed by visitors and members of the Society. Con Buck and Charley Lyman favored the Society with a guitar duet, after which we listened to an instrumental duet by Elsie Crump and Ida Walters. Mrs. Kedzie, being present, was asked to talk, and responded in her usual pleasing manner.

M. H. H.

March 2nd.

At 7:30 Pres. Morse called the Webster Society to order. After roll call, to which 57 responded, the Society was led in prayer by Ed. Webster. In debating the question, "Resolved, that woman has done more for the preservation of our government than man," J. B. Harman and O. O. Wolf affirmed that we are indebted to woman for the moral form of our government, directly by their works, as Mrs. Stowe's "Uncle Tom's Cabin," by their charitable, sanitary, and temperance works; indirectly as woman first instructs the men that give public opinion. B. F. S. Royer and E. B. Patten argued that women had done little; they took no active part in the liberty struggle, or in moulding the laws of the land; and that women had no independent views, but are led by public opinion. As the affirmative's living representatives were visiting Society, the decision was given in their favor. E. S. Carman in his essay, "Joseph Smith," gave a sketch of his life, works, and beliefs. E. M. Frowe showed his ability to handle descriptive work, in reciting "The Crater of Vesuvius." J. C. Wilkin's oration, "One Modern Reformer," was a masterpiece; the theme was Dr. Parkhurst's works. Hayes and Selby furnished the music. "The Improvement of the Public Roads," the subject of E. S. Butterfield's discussion, came "near home" to most of the members; and many suggestions as to methods, durability, and cheapness of improvements were given, that, no doubt, would be accepted could officials hear them. S. F. Morse brought out his humor in giving his views of chicken raising.

E. G. G.

March 1st.

A few raps of the gavel by Pres. Norton brought the Alpha Beta Society to order at the usual time. The program opened with a vocal duet by the Misses Palmer, to guitar accompaniment. Nora Fryhofer led in devotion. A declamation entitled, "The Bachelor's Hall," was delivered in a very creditable manner by Ernest Cottrell, it being his first appearance before the Society. An interesting essay, "The Story of Two Travelers," was read by Gertrude Shofe. The discussion on the question, "Resolved, that the happiness of a nation increases with its civilization," was to have been discussed on the affirmative by E. A. Powell, but owing to sickness his arguments were read by Mr. Westgate. He described the conditions of uncivilized people, showing their inability to be very happy. The continual wars among civilized people interfere with their happiness, and the facial expression of civilized people shows that they are happier than those who are uncivilized. The Christianity of civilized people also makes them happier. W. E. Thackrey stated as negative speaker that uncivilized people have religions in which they are happy and have implicit faith. The equality of uncivilized people tends toward their happiness; also the freedom they possess in everything which civilized people do not have. E. P. Smith gave an interesting talk on "Reminiscence of the South and West." He related some of his experiences in a trip to Texas, Gulf of Mexico, and California, and gave interesting accounts of the principalities through which he passed. The Gleaner was read by Fannie Parkinson in the absence of the editor, Ada Ingman. After recess the Society was entertained by a male quartette consisting of Messrs. Smith, Ridenour, Shellenbaum, and J. J. Fryhofer. A symposium on "Time" was presented: "Past" by Elva Palmer, "Present" by Hugo Halstead, and "Future" by W. H. Phipps.

N. F.

### Maxims of an old Teamster.

Bad tempered driver—bad tempered team.

There are more balky drivers than balky horses.

Big loads, little profits.

Whips are like emetics, to be used very seldom.

Noisy drivers are like noisy wagons—both empty.

Axel grease modifies the grain bill.

A horse's power is proportionate to his food.

Regular and plentiful feeding is good economy.

Five cents' worth of sugar is better than a dollar in whips.

Blinders are worth more on the driver than on the horse.

He who cannot govern himself cannot govern his horse.

The blacksmith is father to much lameness.

Few farm horses need shoes.

Horses need food and water whenever their driver does.

The golden rule applies to horses the same as to men.

The more whip the less horsemanship.—Harry Benson, in *Humane World*.

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

### MANHATTAN ADVERTISEMENTS.

#### BOOKS AND STATIONERY.

**FOX'S BOOK STORE.**—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

**R. E. LOFINCK** deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

**VARNEY'S BOOK-STORE.**—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

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#### DRY GOODS.

**E. A. WHARTON'S** is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

#### CLOTHING.

**ELLIOT & GARRETSON,** Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

**KNOSTMAN CLOTHING COMPANY** offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

#### WATCHES, JEWELRY.

**J. O. A. SHELLEN,** "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

**R. E. LOFINCK** keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

#### DRUGS.

**W. C. JOHNSTON,** Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

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**A. J. WHITFORD** sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

#### DENTIST.

**D. R. C. P. BLACHLY,** Dentist. The famed Odontunder used for painless extracting.

#### PHOTOGRAPHS.

**DEWEY,** the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

#### LIVERY.

**PICKETT & LONG'S LIVERY STABLE.**—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

#### MEAT MARKET.

**SCHULTZ BROS.** offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

#### SHAVING PARLOR.

**6 BATHS,** \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

#### GENERAL MERCHANDISE.

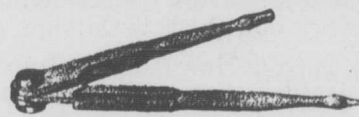
**THE SPOT CASH STORE** is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

**E. B. PURCELL,** corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

#### PHYSICIANS.

**INFIRMARY** for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. **SOLOMON D. ROSS,** M. D., 523, 525, 527 P'tz Av.

### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address **O. P. HOOD,** Supt., Manhattan, Kan.



# THE INDUSTRIALIST.

VOLUME XX.

MANHATTAN, KANSAS, SATURDAY, MARCH 16, 1895.

NUMBER 27.

## THE INDUSTRIALIST.

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### STATE AGRICULTURAL COLLEGE

EDITED BY THE FACULTY AND STUDENTS.

SUBSCRIPTION, FIFTY CENTS A YEAR.

[Entered at the Postoffice at Manhattan, Kan., for transmission through the mails as Second-class Matter.]

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#### AMONG THE GARDENS.

BY JULIA R. PEARCE.

"THE springtime has come, gentle Annie," and with it comes to most of us the desire to dig in the dirt, and to have a garden of our own, be it never so small, nothing more than a row of sweet peas, perhaps. Margaret Fuller has said, "Those who till a spot of earth scarcely larger than is wanted for a grave have deserved that the sun should shine upon its sod till violets answer." Some of us are denied even this, as yet, and must be satisfied with a geranium in a tomato can sitting in the south window, or must gratify our yearning toward the "green things growing" by looking at other people's gardens. At other people's gardens, did I say,—perhaps in other lands and other times. I fall to dreaming, and in fancy wander in and out of the quaint old gardens of history and romance. I pluck of the hiscop that springeth out of the wall in King Solomon's garden, where grew every manner of curious herb, trees of pine and cedar, and fruits in their season. A great botanist for his time was this old King Solomon, who, we are told, was acquainted with all plants from the Cedars of Lebanon to the lowly hiscop. Let us rest here awhile where "the beams of our house are cedar and our rafters of fir," where we can hear the splash of the fountains and ripple of the low streams which flowed through this old time garden which we have made our own for the time being. "Awake, oh north wind, and come thou south, blow upon my garden, that the spices thereof may flow out," or we will sit us down in the winter garden of Jehoakim among his lilies and winter bloomers.

We'll wander on through that interesting old botanic garden at Padua, established by a wealthy Tuscan noble in 1545, the first garden instituted for the study of all kinds of plants. It is here that the scene is laid of the French story of "Rappacini's Daughter," which Hawthorne has translated for us. We shudder as in fancy we inhale the blighting breath from those poisonous herbs or see the brilliant flowers whose odor meant death; but among which the beautiful girl worked unharmed, seeming to draw her very life from the poison they exhaled, and who herself was the most beautiful, and whose breath was the most fatal, to other living creatures of all the brilliant flowers that lived and bloomed in that garden. We see the birds of the air above quiver and fall dead as they attempt to sail over this beautiful but terrible garden. We are glad to know that it existed only in the fancy of an imaginative writer, and that the old garden of Padua was in no way responsible. Gardens have always taken a more or less prominent part in literature. There is the garden of "Miss Mary, quite contrary," about which we have all been more or less concerned; Bocacio's garden, where lived his very congenial souls; or that wonderful underground garden about which we read in "The Fair God"; or the cool and lovely gardens along the Bosphorus, which Lew Wallace has described for us as perhaps no other writer could when he tells us of the wanderings of that quaint and mystic character, the Prince of India.

But stranger and more beautiful than any gardens of fiction are the real ones. For instance, the rose fields of Balkan, forty miles in length, which is only one of the many rose-producing districts where they cultivate roses for their essence and sell it to us at a fabulous price as attar. But can we wonder at the price when we are told that it takes three hundred pounds of rose petals to make an ounce of attar. Imagine, if you can, you who have worked and watched and waited for your one rosebush to bloom,—imagine hundreds of acres of roses, where the senses cloy with the sickening sweetness of the perfume. In direct contrast to these are the odorless gardens of Japan, the Flowery Kingdom, where it is supposed the salt air from the ocean destroys the perfume. However that may be, true it is that an apple orchard by the sea, even in full bloom, has no odor.

Then there are the grand old gardens of Spain, that land of castles and of dreams. We wander with Irving through the Moorish gardens of the Alcazar and the historic Escorial where play fountains which send their jets a hundred and thirty feet into the air.

They have their counterpart on this side of the globe, the result of an older civilization than theirs,—the gardens of Montezuma as they are called. By the way, this Montezuma lived in an adobe pile, a gloomy old place with no signs of art or landscape gardening about it. The real founder of the Monte-

zuma gardens was one Nezahualcoyot'l, whose name you ought to learn to pronounce—the least you could do after all my trouble in looking it up to see how it was spelled.

Of all the luxurious spots on earth intended to ravish the senses and cater to the tastes of voluptuous monarchs, perhaps none excel Petit Trianon, the home of Marie Antoinette, where she satisfied every passing whim, appearing at one time as a dairy maid, at another as a shepherdess, and with distinguished attaches to the court entertaining kings, czars, and emperors in this lovely garden. But here is displayed too much the work of men and too little of nature. I prefer to let my thoughts lead me along the banks of the Hudson River, which, from Castle Garden to its source, is one lovely garden, one succession of wooded points, glades, and vistas, cha-teaus and castles, till in trying to realize all the beauty and romance of the stately, grand old river, I am awakened from my dreams and fancies to an appreciation of the real, and looking across the room at my row of tin cans on the window sill, I sing with King Solomon, "Awake, oh north wind, and come thou south; blow upon my garden that the spices may flow out."

#### COOKING BY ELECTRICITY.

BY SUSAN E. JOHNSON. '96.

IN moving forward in science, the art of cooking has not been neglected. I believe one of the greatest steps ever taken in this is the mode of cooking by electricity, which began to be prominent in 1890. Now there are twelve companies making utensils for cooking by electricity. The Club House at St. Paul, Minnesota, does all its cooking in this way.

The electricity is turned on, and, wires heating quickly, all is in readiness to begin cooking. There is no time wasted in waiting until the fire burns.

One kind of oven is of iron, lined with asbestos to prevent radiation of heat. An incandescent lamp is in the oven so we can plainly see through the glass window in the door and watch the white masses of feathery dough change to the delicately browned loaves of bread, or the roast change from a dark red to a velvety brown. Attached to the outside of this oven, at one end, is a switch that may be turned to give the temperature desired. The thermometer is placed on the upper side in one corner. Helen Johnson claims that the temperature of the oven can be raised or lowered 110° in ten minutes. Heat may be obtained from the bottom, the top, or from both places.

The expense per hour to cook by electricity is somewhat more than it is by the stove, but when the expense is counted we should always think of the convenience. Taking the convenience into consideration, there is no practical difference in cost. It requires 4 amperes and 100 volts to heat a flat-iron. This costs eight cents an hour. Out of 100 tons of coal used for cooking with a stove, statistics state that 96 tons are wasted.

Engines are not so available in our country homes as in the cities; but the sweeping winds which traverse our prairies might be used to generate electricity by the aid of wind mills and storage batteries. When the wind blows, the storage battery might be charged, and during calms the battery may be connected with the heating appliances. The same battery plates may be used any number of times. The mechanical energy of the wind is changed to electrical energy; this into chemical energy; this, when wanted, into electrical energy and heat. The storage battery has a low resistance and a high electromotive force, therefore it gives a large volume of current.

Electricity has been used for street cars to save the horses' strength; now there is a chance opened to save the strength of women, and we hope someday to see it used as well in the kitchen as for the street car. Electric cooking may be done in the country as well as in town. "Bill Nye" has successfully used electricity to light his house of twenty rooms, which is in the country. Why not use electricity for cooking in the country? [Mr. Nye's house is near a stream which provides water power to run a dynamo.—ED.]

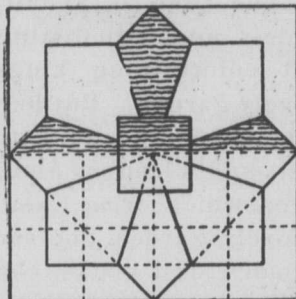
Some of the characteristics of electricity are: it is clean, making no smoke or odor; it consumes no oxygen of the room; it is safe, and with the best improved ovens there is no radiation of heat, therefore no over-heated kitchens. We hope this luxury lies in the near future for us.



## A NEW TEXT BOOK IN FREE-HAND DRAWING.

BY PROF. J. D. WALTERS.

THE illustrations on this page are specimen figures from a course in primary free-hand drawing designed by the writer of this article and used at the Kansas State Agricultural College for the past four years. The series owes its existence to necessity i. e., to the peculiar conditions existing here. Our pupils come mostly from country districts where little or no drawing is taught, but they are bright and mature, the average age of the freshman being about 19 years. Experience in the class room has shown

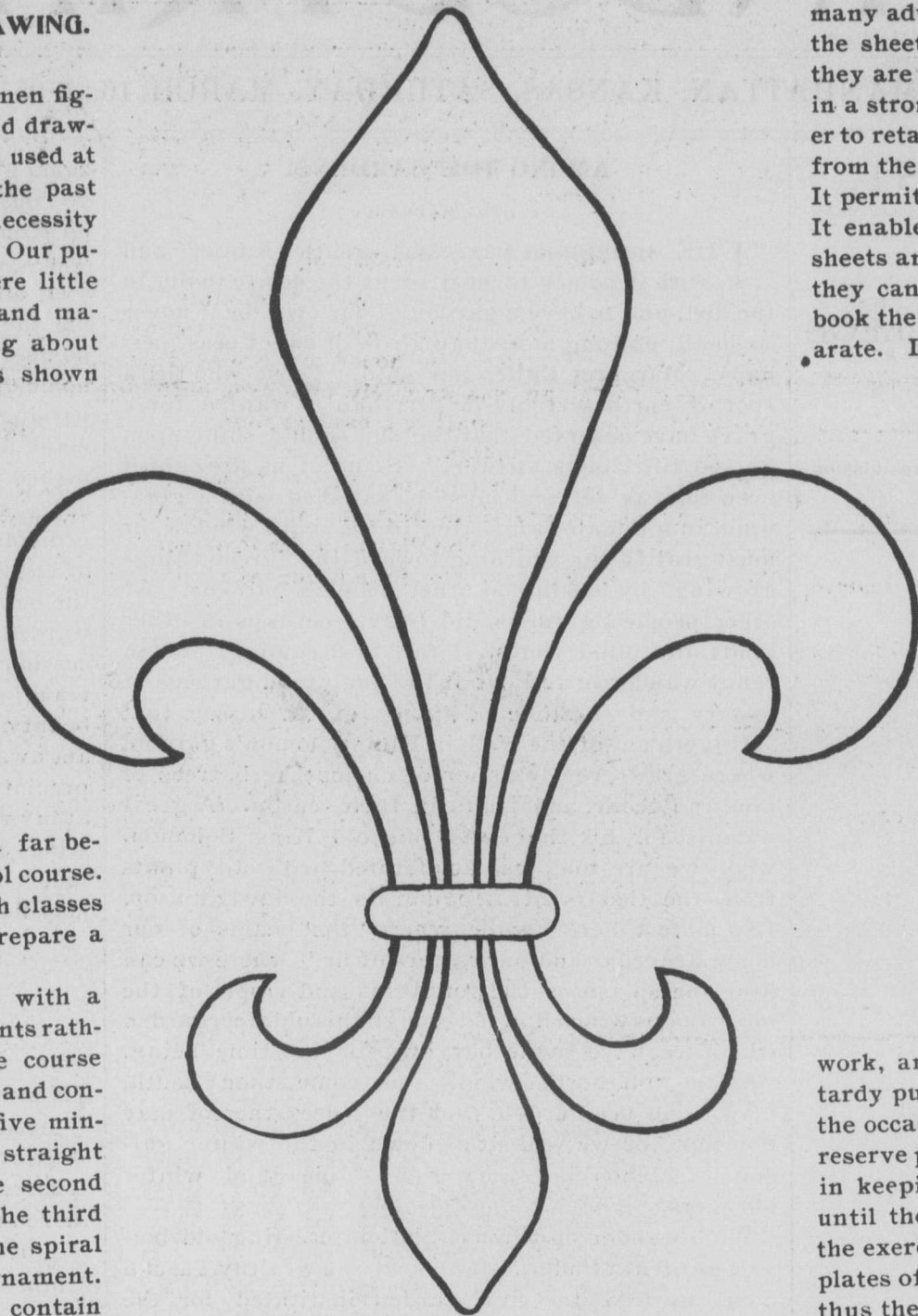
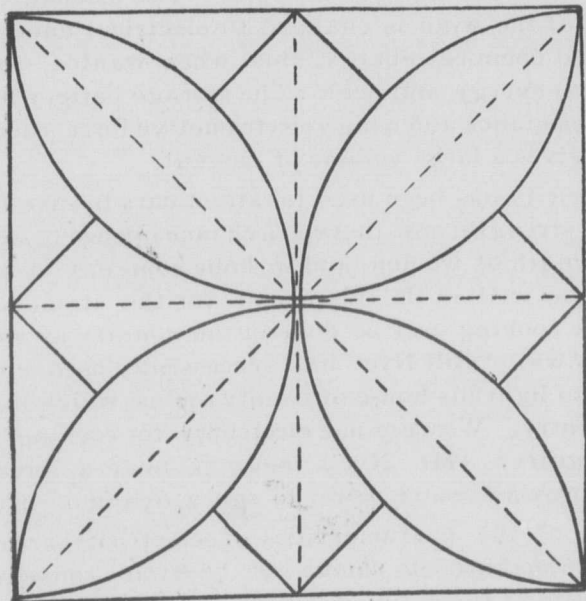


that besides doing more work they would progress at least twice as fast as the pupils of the ordinary graded city schools, for whom the excellent course of Prang, White, Barnes, Thompson, Bartholomew, etc., have been especially designed. Only one term could be given to freehand drawing "in the flat," while geometrical drawing, descriptive geometry, and perspective had to be pushed far beyond the limits of the common or high school course. There were no text books in existence for such classes and the only thing to be done was to prepare a new series.

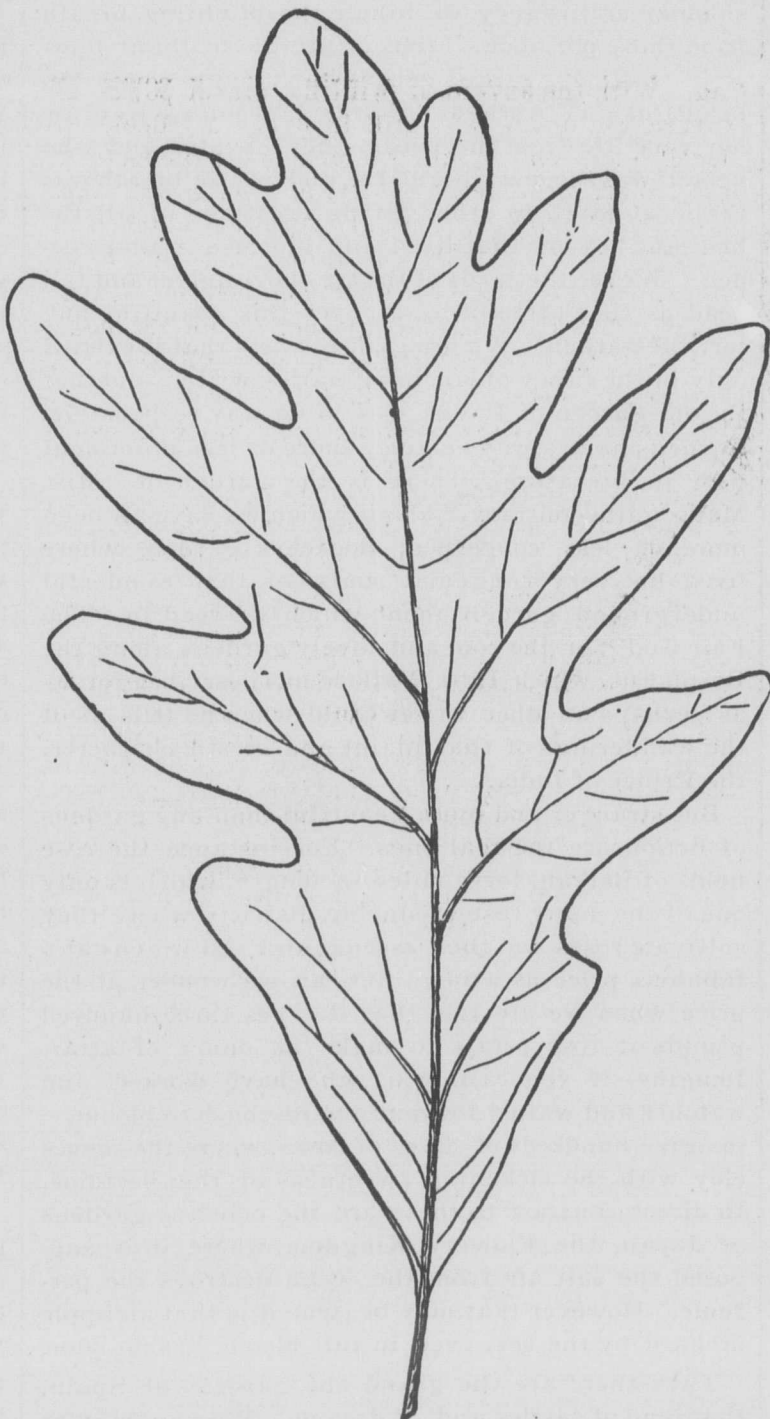
In doing this work every step was taken with a view to meeting our actual conditions and wants rather than the needs of the ideal school. The course consists of twenty printed tablets, or plates, and contains work for nearly sixty lessons of forty-five minutes each. The first five tablets treat the straight line in various attractive combinations; the second five, the straight line and the circle, or arc; the third five, the elliptic arc, the wave line, and the spiral line; and the last five, the conventional ornament. The tablets measure  $8\frac{1}{2}$  by 11 inches, and contain printed original figures to be copied—enlarged or reduced—prints to be repeated, panels to be filled, etc. All are provided with ample directions for the

pupil, so that he may work without much personal assistance on the part of the teacher. The drawing is done upon the blank parts of the plate, which is a sheet of first-class white American drawing paper. The most difficult task of

the teacher of drawing, one which no course of study must neglect, is the creation of correct taste and the inculcation of a love for the beautiful. As a means to this end the figures forming the course are without exception of simple geometrical arrangement, the curves are gradual and graceful, the connections tangential, the designs transparent and symmetrical or radial, while the arrangement of each tablet exhibits a pleasing distribution of features and correct balance. Some few of the figures require dotting or

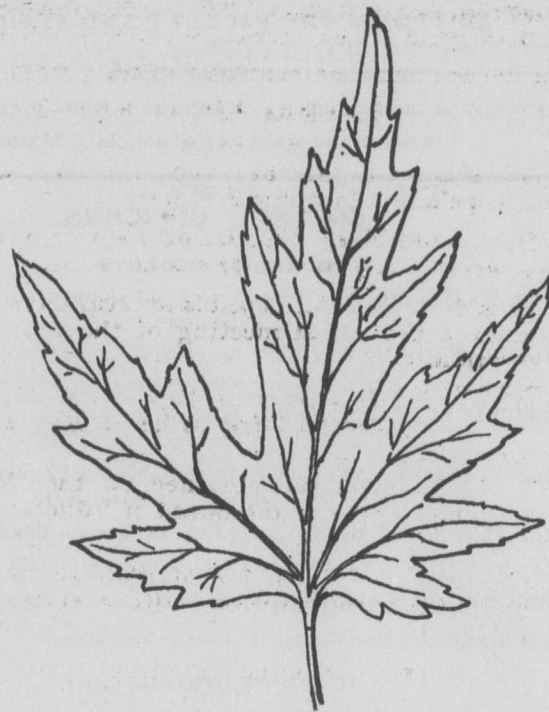


FLEUR DE LIS.

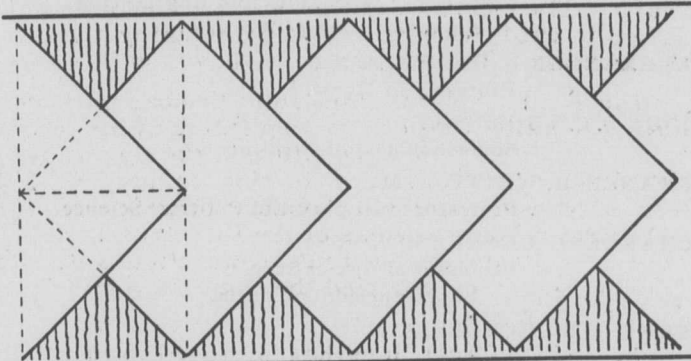


tint-lining, but, with two exceptions, no effort is made at shading. The text refers occasionally to the historic origin of figures such as the fret, the egg and dart, the astragal, the acanthus, the fleur de lis, etc. These separate sheet form was adopted because of its

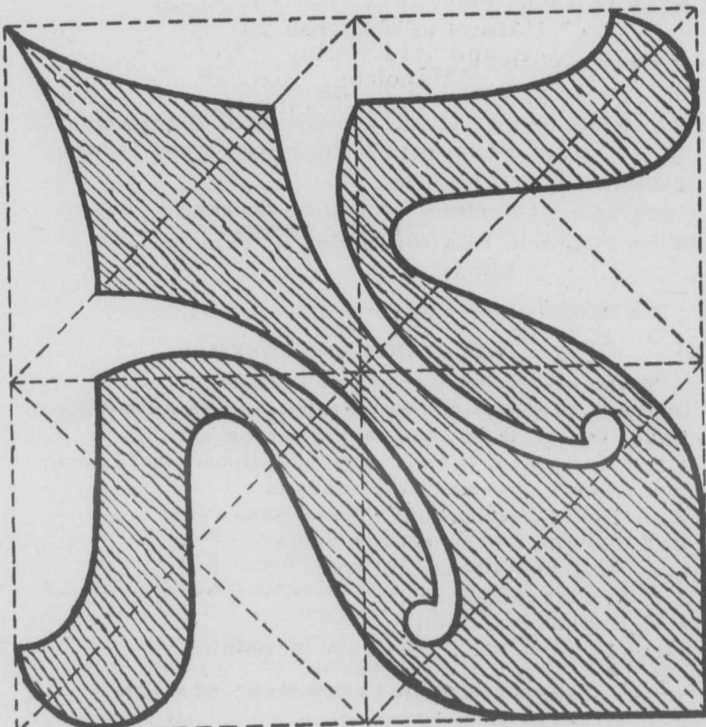
many advantages over the usual book form, though the sheets are not pasted together into tablets as they are in the Forbriger course, but they are sold in a strong manilla envelope. This permits the teacher to retain at the close of the term one or more plates from the work of each pupil for exhibition purposes. It permits the pinning to the wall of good specimens. It enables the pupil or teacher to keep the blank sheets and the finished work in the envelope where they cannot get soiled or dog-eared, while in a draw-book the pages can not be detached and kept separate. It permits the teacher to collect the finished



work, and thus offers the proper means to urge the tardy pupils to keep up with the class. It permits the occasional substitution of torn or soiled copies by reserve plates. Last, but not least, it is of advantage in keeping the contents of the course from the pupil until the lesson arrives. Instead of spreading open the exercises of an entire term before the pupil, the plates of the course may be kept by the teacher, and thus the attention and interest may be concentrated upon a single figure. The pupil cannot roam carelessly over the exercises still far in advance of him. The philosophy manifested by excluding everything which distracts attention, and which does not bear directly upon the work, should be recognized by every intelligent teacher.



The course has been tested by a number of schools, and has given excellent satisfaction wherever the conditions were similar to ours. The first edition, however, is now nearly exhausted, and if other educators should wish to give it an extended trial, they will confer a great favor upon the author by corresponding with him, so that arrangements for a larger second edition may be made.





## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds a. par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Secretary Graham has been elected a member of the Topeka Philosophical Society.

Hattie and Mary Paddleford spent a day at home this week to attend the funeral of a niece.

President Fairchild spends several days in Topeka attending the initial meeting of the State Board of Irrigation.

Miss Laura Day went to Topeka on Wednesday to be present at the wedding of her friend, Miss Angie Henderson.

Prof. Lantz is the nominee on the Temperance ticket for member of the Board of Education of Manhattan.

The next meeting of the Manhattan Horticultural Society will be held in Horticultural Hall next Thursday, the 21st.

Miss Rupp mourns the loss of her father, who died at his home in Terre Haute, Ind., February 10th. Her mother is also quite sick.

Rev. R. M. Tunnell led in chapel exercises Tuesday morning, and Dr. Tracy, the temperance lecturer, addressed the students on the evils of intemperance.

Owing to a misunderstanding of some sort, the Experiment Station receives daily requests for garden and other seeds. The Station has no seeds for distribution, and perhaps will not have until Congress passes a law providing for it.

A. G. Bittman rode up from Wamego on his bicycle through the snow on Wednesday to practice with the Webster orchestra for the exhibition. He is awaiting the result of his examination for West Point, and if he is not assigned until next fall will return to College for the spring term.

The beautiful original half tone engraving which adorned the title page of the Webster programs was the elaboration by Prof. Walters of Supt. Thompson's suggestion. The portrait of Webster is from a photograph. The members of the Society are under obligation to Prof. Walters for his painstaking work on the drawing. The engraving is shown on this page.

Prof. E. M. Shelton writes from Brisbane, Queensland, Australia, that on the expiration of his second term as Instructor in Agriculture in the Government School there he will return to this country to permanently reside, and will probably locate in Southern California. Many readers of the INDUSTRIALIST will remember Professor Shelton's connection with this College, he having occupied the chair of Agriculture for sixteen years.

The College Cadet Band has improved wonderfully of late, owing doubtless to regular practice required by action of the Faculty. Remenyi's hand would lose something of its cunning did he not keep in training by practicing several hours each day. And now that our band is capable of furnishing music of a high order, let the members hang together for the remainder of the year, and not torture their friends with the discordant blasts of preliminary drill incident to a new organization.

The public hour Friday was occupied by the third division of the Fourth-year Class with orations on the following subjects: "Death Valley," Hugo Halstead; "And it Followed as the Night the Day," Hortensia Harman; "Why so Contrary?" C. V. Holinger; "Life and its Evening," Mabel Selby; "The Rise and Fall of Napoleon," Fred R. Jolly; "A Remarkable Woman," Dora Thompson. The music was furnished by the Cadet band and by a mandolin and guitar trio by members of the Class.

## Notes From the Department of Entomology and Zoology.

The Department is in receipt of a fine lot of alcoholic specimens of marine animals from the various beaches near Garden Grove, California, collected by Mr. R. H. Kimball, who returned from that place the first of the month. The collection is at present stored in a large collecting can; but as soon as display jars can be secured, they will be assorted and properly displayed, at which time a more extended notice of them will be given. The Department would gladly accept similar collections from any of the other friends.

The museum has been enriched by some thirty-four skulls of various mammals, many of which are accompanied by the skins in such condition that they can be mounted. The skulls have been carefully cleaned, and articulated, and make a very attractive display as well as an interesting study. Five of the skulls were sent to us by Mr. I. P. Barnhouse of Bird City, Kansas. They are those of a male and female Badger, male and female "Brush" wolf, and female Swift fox. The latter was accompanied by a small skull of a prairie dog.

nied by the skin, which, when mounted, will make a very attractive museum specimen.

Miss Bertha Kimball, the Department's special artist, has just executed a series of pen drawings of the "Texas Bed Bug" (*Conorhinus sanguisugus, Lec.*) These drawings are to be photo-engraved and will be used to illustrate her paper on the life history of that insect as published in the proceedings of the Kansas Academy of Science. F. A. MARLATT.

## The Webster Exhibition.

The Webster annual program opened promptly at eight o'clock Saturday evening with an overture by the Webster Orchestra. The house was crowded as usual, and the stage was uniquely arranged with a vine-clad antique stone wall as a back ground.

Prof. Olin led in devotion.

The Websters did well in choosing F. J. Smith to represent the Society at its best, in the Annual Address. The subject was "The Platform: Its Province." The public speaker laid the foundation of civiliza-

ism." The paper was interesting and well delivered. The song "Open Thy Window, Love," was nicely sung by the quartet.

The play "Humpty Dumpty on a Wall," was very funny, and out of the usual order.

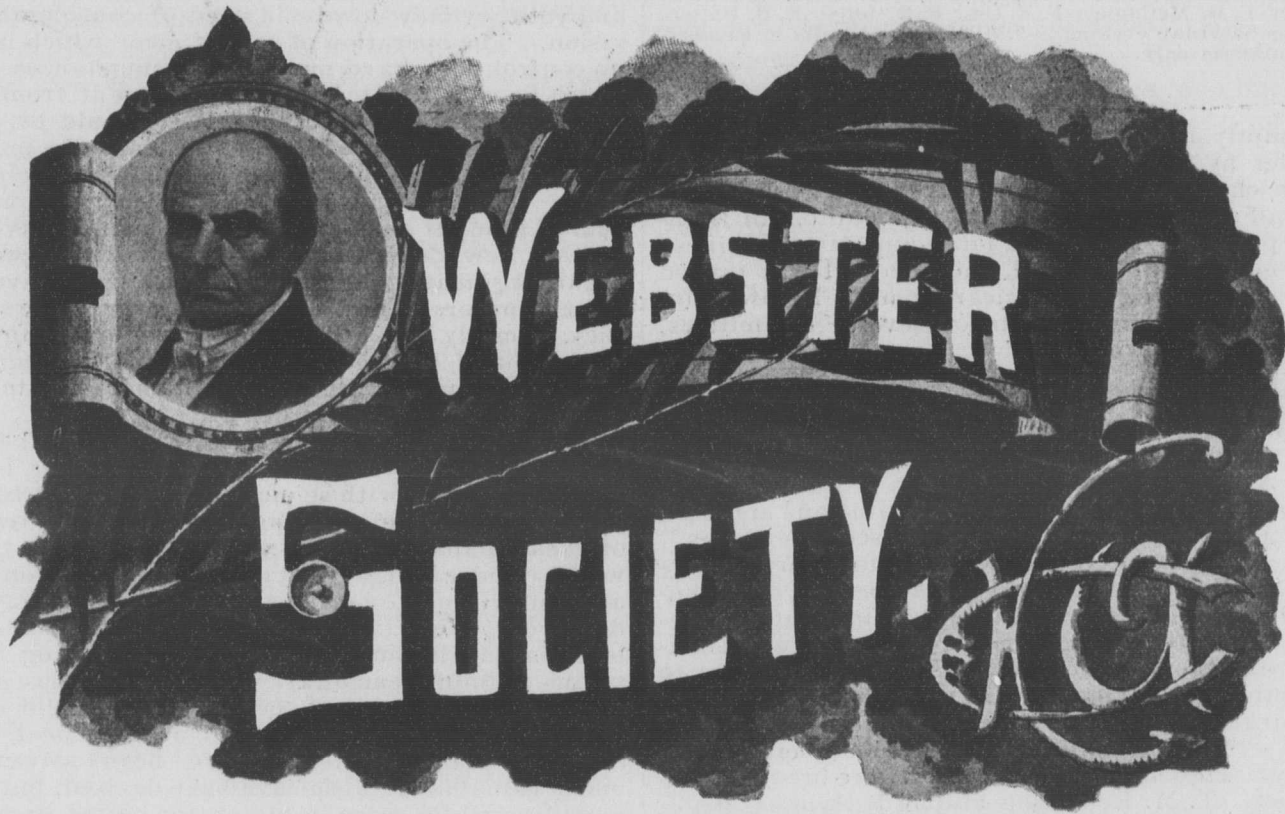
The last oration, "The Calmness of Power," was forcibly presented by J. V. Patten. Power is always admired. We revere the silent power of Nature in repose. Intellectual power is worthy of our highest admiration. Brilliant minds, like Voltaire's, may dazzle for a moment only to leave behind a path of destruction for those who follow. Perfect growth is slow and calm, growing by thought. "Beware when God lets loose a thinker on the world."

The program was closed by a selection, "Garden City Waltz," by the Webster Orchestra. G. W. F.

## GRADUATES AND FORMER STUDENTS.

G. K. Thompson, '93, is at College for a few days "brushing up" for an examination.

A. L. Frowe, Second-year in 1893-4, is at College for a short visit.



ORIGINAL TITLE PAGE, WEBSTER PROGRAM.

tion. With the advent of printing, steam power, literature, the orator was still in demand. Books are plentiful and cheap, still we must have the lecturer, orator, barrister, preacher. He is a necessary exponent. Thus Darwin, Huxley, Agassiz, reached the masses. Only a speaker can arouse a nation to action by uttering, "Give me liberty or give me death." In the political world, the speaker is not the demagogue; at the bar he is the sincere pleader. The preacher has been with us since the landing of the Mayflower, and is now teaching the religion of reason, good health, love, and liberty.

A male quartet, "The Grand Old Ocean," was rendered by Messrs. Rader, Selby, Hayes, and Patten. The song was heartily applauded, and was followed by an encore.

The debate, "The power and influence of music vs. that of oratory," was argued on the affirmative by J. B. Dorman and negatively by F. E. Uhl. Unfortunately, at the last moment, Mr. Dorman was taken with the mumps and a synopsis of his arguments was read by E. L. Brockway. The two powers have different spheres. Oratory is used only in politics and religion. Music takes a part in these, the home and many other places. The minister pleads to repentance by some inspiring hymn. Music is an educator of the emotional nature. Music inspires to courage in battle. Music charms; man sways before it; by it material bodies lose their power of cohesion.

The negative, forcibly presented, replied: "Eloquence for the soul, song charms the sense." Witness the triumphs of sacred oratory by such men as Luther, Knox, Beecher, Spurgeon. The orator must guide men's actions in time of turmoil. As long as men delight in the human voice we will have the orator. He is the guardian of rights.

Mr. E. H. Freeman's eulogy on Alexander von Humboldt was well written, and ably delivered. Humboldt was educated for a statesman, but his natural bent was toward science, and he had a thorough knowledge of all sciences. Five years were spent in South America getting information and specimens. The crowning work of his great mind was his "Cosmos." At the age of ninety he died, and thus faded away a mighty intellect which had made every department of knowledge richer by its work.

The chorus, "Mid-Shipmite," was rendered by fifteen Websters. It was well sung, and was, indeed, a masterpiece. Mr. C. B. Selby presented, to the delight of the entire audience, his original cornet solo, "Neska," dedicated to and named in honor of Mrs. Nellie S. Kedzie. Professor Hofer accompanied. The solo was artistically played, and heartily encored.

The Reporter, presented by E. C. Trembly, contained Editorials, Adapt yourselves to your surroundings, "Jokes," "Trip to Mars," "Scientific Investigations and College Life," "Labor Omnia Vincit," "Practical Patriotism," "Love Story," poem, "Idealism."

Harry C. Rushmore, '79, is now travelling for a wholesale hardware house in Topeka.

H. A. Platt, '86, is in the newspaper business. He represents the Guthrie (Oklahoma) Leader.

Clarence E. Wood, '79, has a fine farm in Woods Co., Oklahoma, and gets his mail at Erwin.

Eusebia Mudge, '93, came up from Eskridge yesterday to attend the Webster exhibition and visit friends.

Phoebe Turner, '93, is here to attend the Webster Exhibition, and visit with College friends for a day or two.

E. M. S. Curtis, '93, has a good position in the Accountant's office of the Michigan Central Railway at Detroit.

C. W. Curtis, Third-year in 1889-90, visits at College today on his way to Council Grove, his home, after a year's absence in Minnesota.

L. A. Salter, '79, is now a successful lawyer at Alva, Ok. He writes of continued interest in his alma mater as well as in agriculture.

G. E. Stoker, '90, will attend the Webster exhibition this evening. As a partner in the law firm of Dobbs & Stoker, Topeka, he finds little time for play, the business being in a very flourishing condition.

W. C. Moore, '88, was a welcome visitor Thursday afternoon, though his stay was brief. He carried away with him some engravings to illustrate an article on the College which he is preparing for his paper, the Junction City Union.

E. H. Kern, '84, writes from Ionia, Kansas, that he is still living on the old farm, either farming or working at his chosen profession, civil engineering. He wishes to be remembered to all his old friends. He reports times very hard in Jewell county.

J. F. Odle, '94, writes from Rhinecliff, N. Y., that the more experience he has the more he sees the necessity of a thorough practical course in agriculture. He regrets the lack of appropriation for a dairy department at this College. Western farmers could, he thinks, easily compete with the eastern dairymen if they made use of the same improved methods.

G. G. Harbord, '86, is the Lieut. Harbord of the following item from the society column of the St. Louis Globe-Democrat, and he frankly admits, that "it's a true bill." "A tea was given on Friday afternoon by Miss Francis Cabanne, when she announced to her young friends her engagement to Lieut. Harbord, U. S. A., now stationed at Fort Leavenworth. The wedding, however, will not come off until next fall. Letters of congratulation are pouring in upon Lieut. Harbord, as Miss Cabanne is one of the loveliest and most popular girls in society."



## COLLEGE ORGANIZATIONS.

**Student Editors.**—T. W. Morse, G. W. Fryhofer, Maud E. Kennett.

**Hamilton Society.**—President, C. A. Johnson; Vice-President, W. I. Joss; Recording Secretary, C. E. Pincomb; Corresponding Secretary, W. L. Hall; Treasurer, M. L. Heckert; Critic, B. W. Conrad; Marshal, A. W. Staver; Board of Directors, R. J. Barnett, C. S. Marty, G. C. Hall, J. Poole, L. G. Hepworth. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

**Alpha Beta Society.**—President, J. B. S. Norton; Vice-President, Gertrude Havens; Recording Secretary, R. W. Rader; Corresponding Secretary, Nora Fryhofer; Treasurer, A. C. Havens; Critic, A. E. Ridenour; Marshal, E. P. Smith; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

**Ionian Society.**—President, Ethel Patten; Vice-President, Ada Rice; Recording Secretary, Gertrude Stump; Corresponding Secretary, Myrtle Hood; Treasurer, Emma Finley; Marshal, Hope Brady; Critic, Florence Corbett; Board of Directors, Laura McKeen, Flora Day, Mabel Selby. Meets on Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

**Webster Society.**—President, T. W. Morse; Vice-President, F. E. Rader; Recording Secretary, J. B. Dorman; Corresponding Secretary, E. G. Gibson; Treasurer, W. B. Chase; Critic, W. H. Steuart; Marshal, J. R. Henrey; Board of Directors, G. C. Wheeler, C. D. McCauley, F. E. Uhl, F. R. Jolly, E. B. Patten. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

March 9th.

Promptly at 7:30 the Hamilton Society was called to order by Secretary Pincomb. J. W. Holland was chosen chairman in absence of President Johnson. Roll call showed an unusually large number of Hamiltons present. Owing to a large amount of business the program was dropped, and the hall was turned into a court room. After clearing up a lot of unfinished business and reports of several committees, the Society adjourned. W. A.

March 16th.

Pres. Morse assembled the Webster Society at the usual time; roll call was followed by prayer by F. E. Uhl. A. Smith became a member. The question, "Resolved, that our charitable institutions are more beneficial to the general people than secret societies," a question of the times—was debated affirmatively by E. L. Brockway and B. F. S. Royer. They mentioned some of the state charitable institutions, besides those of churches those run by private donations, and they showed how they were beneficial to the public in caring for the poor and helpless; as they argued, they are a home for the homeless, while secret societies are not, only to members of their society. They also held that strikes are bred by these societies. T. M. Robertson and A. B. Symms, negatively, argued that secret societies are better fitted for reaching the general public in that they are better organized, and more numerous. And that secret societies take men and educate them to be better brotherly citizens, which guarantees them kindness among their people, and aids them in finding employment. Also, it improves men morally that others would not reach." The decision was given to the affirmative. R. M. Lee favored the Society with a mandolin selection. A declamation, "Repudiation," was well delivered by E. S. Laury. The Webster Reporter was edited by E. G. Gibson. Though it was not what it might have been, it was all that it could have been, since it was almost wholly original. The Society saw fit to accept it with the formal applause. F. H. Meyer showed what he imbibed from Dr. Tracy's temperance course, by reciting a declamation, on his co-worker's theme, "Temperance." The printing press was discussed in an interesting manner by L. A. Nelson. E. G. G.

## Bacteria of the Barn.

In these days when some phase of bacteriology enters into almost every action of man, it is time for the farmer to consider its relation to his work. For his first field of study he might well turn to his cow barn, where he will not only find the greatest abundance of material, but where a few thoughtful precautions will be well repaid. Under the nearly perfect conditions of the new experimental barn at the Iowa Experiment Station it has been found that in five minutes' time an average of 4,454 germs will fall upon a surface equal to that of the milk in an ordinary sized milk-pail, if it were set a few feet behind the cows. Directly under the cows the number would be much increased, owing to dislodgment during milking. Observations in the open air outside the barn revealed only about one-fourth as many.

Among these barn germs are included the beneficial lactic acid producing species, so necessary to ripening of cream, as well as the deleterious producers of some of the most nauseating taints and putrefactions. Infections from these latter is in proportion to the cleanliness of the barn, the cows, the milkers' clothes, ventilation, etc. Neither feeding with coarse fodders nor cleaning the stable should be done during milking or nearer than an hour or so before milking time, for myriads of germs may be set in motion, and the milk pail being usually near the floor will get its share. Horses should never be kept in the same section of the barn with cows, for horse manure is a very favorable medium for the growth of putrefactive species. The presence of horses only multiplies the disagreeable odors so readily absorbed by the short stay in the barn.

As it comes from the udder of a healthy cow milk contains no germs, and if properly handled may produce the finest of butter; but if subjected to filthy infections of any kind, strong butter is the certain result. In part, this explains the difference between ten cent and twenty-five cent butter.—C. D. Reed, in *Rural Life*.

## Review the Farm Plans.

Doubtless every farmer who reads this journal has already planned his work for the present year. The plans have been made with considerable care, and in most cases their principal features will be retained, but now, as the time for commencing active work in the field is near, it will be wise to give a little time and thought to a reconsideration of what has been marked out as the course to be pursued. Even if no great changes are made, this work may be of value in leading to a modification and improvement of details, as well as in calling attention to minor matters that otherwise might be overlooked.

While it is true that change is not always improvement, it is equally true that a man who makes his plans once for all and declines to review them misses many opportunities for making them better. It is not a reflection on the skill of the farmer to suggest the possibility that the plans made during the past winter may now be improved. At the time they were made they were the very best that could be devised, and yet they may now be in need of considerable revision. The operation of causes, over which he had no control, may have made the circumstances under which he will have to work very different from what he had a right to expect that they would be. This unlooked for change of circumstances can be properly met only by a modification of the plans of doing the work. Then, too, farmers who have given a good deal of thought and study to their business have been getting new ideas, and have also obtained new light regarding many things with which they have long been familiar. They can take broader views than they formerly had. They have been growing wiser as they have been growing older and consequently are more competent to both plan and execute than they have been at any previous time.

Probably there are some readers, perhaps there are a large number, who have made their plans for the work of the year with so much care that they feel disposed to look upon anything in the line of a revision of these plans as hardly worth the trouble that it would require. If they act upon this impression some, at least, will make a serious mistake. They may have done well. Very likely they have. But no one should be satisfied with merely doing well. As long as the means of improvement are within reach there should be a constant effort to do better. In the field of agricultural practice there is still a great deal to be learned. Many mysteries have been solved and many valuable methods have been devised, but there is still a call for more light and for better processes. There are many things of which the farmers in the very front ranks have but little knowledge. And, what is more unfortunate, is the fact that many do not use all the light they have. Competition is now so keen that every available aid to economical production should be gladly accepted. Among these aids the revision of plans for the field work of the year, even though these plans were carefully formed, is one which no farmer can afford to neglect.—*Practical Farmer*.

## Increase the Fertility of the Soil.

Whatever adds to the producing power of the soil must be regarded as a fertilizer, and the first of all fertilizers is moisture. There is no soil so poor but which is still fertile enough to yield a fair crop if water can be applied in a regular and uniform quantity sufficient for the plants. But water cannot be so applied to most soils, and in proportion as the decayed vegetable matter in the soil is destroyed by tillage the ability of the soil to hold what moisture it receives is destroyed. The loss of fertility and loss of moisture are, therefore, co-operative to a large extent and the problem of increasing fertility is solved by increasing the moisture in the soil.

The mass of moisture reaches the soil as rain-fall. It escapes in three ways: (1) By running off the surface; (2) by leaching through the soil; (3) by evaporation into the atmosphere. The rapidity with which the waste goes on depends on the physical condition of the soil, and it is here that the ability of the farmer to control moisture finds full scope.

The capacity of a soil to absorb and retain moisture depends on the relation of the particles in that soil to each other, as well as on the size of the particles. A clay soil may be in a fair condition for tillage and producing good crops till at some time when the soil is full of water it is tramped by animals or stirred by the plow. The result is the soil runs together in mortar; when it dries out it bakes, and is lifeless and unproductive. The size of the particles of earth has not been changed. They have merely been brought into different relations to each other. Other causes producing changes of relation in the particles of soils of different character give results equally as striking and important as the familiar illustration given above. It is a common experiment to fill a filter with clear river sand, and on this sand weak manure water is poured. At first the water will run through the sand and will be filtered nearly or quite clear. But after a few minutes the flow of water will cease, and the pure sand will then hold water as if it were a clay. The action of the manure water has served to change the relation of the grains of sand till they make a tenacious soil.

The farmer can conduct these experiments on a scale as extensive as his farming operations, and always with the same results. Manure or other material abounding in organic matter applied to a porous soil will make it more tenacious and therefore more retentive of moisture; while drainage and subsoil ploughing will aerate and increase the absorbing power of heavy soils with similar beneficial results.—*The Cultivator*.

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

## MANHATTAN ADVERTISEMENTS.

## BOOKS AND STATIONERY.

**FOX'S BOOK STORE.**—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

**R. E. LOFINCK** deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

**VARNEY'S BOOK-STORE.**—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

**LESLIE SMITH.** College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

## DRY GOODS.

**E. A. WHARTON'S** is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

## CLOTHING.

**ELLIOT & GARRETSON,** Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

**KNOSTMAN CLOTHING COMPANY** offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

## WATCHES, JEWELRY.

**J. O. A. SHELDEN,** "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

**R. E. LOFINCK** keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

## DRUGS.

**W. C. JOHNSTON,** Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

## HARDWARE.

**A. J. WHITFORD** sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

## DENTIST.

**D. R. C. P. BLACHLY,** Dentist. The famed Odontunder used for painless extracting.

## PHOTOGRAPHS.

**DEWEY,** the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

## LIVERY.

**PICKETT & LONG'S LIVERY STABLE.**—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

## MEAT MARKET.

**SCHULTZ BROS.** offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

## SHAVING PARLOR.

**6 BATHS,** \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop. Next door to Postoffice.

## GENERAL MERCHANDISE.

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## A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address **O. P. HOOD, Supt.,** Manhattan, Kan.



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#### ODD MOMENTS.

BY JOSEPHINE HARPER.

"TAKE care of the minutes, and the hours will take care of themselves," is an old but true saying, seldom fully appreciated, or the admonition heeded by the generality of mankind. A minute is a short space of time,—only sixty seconds,—and it takes sixty to make an hour; and what is an hour in a life time? Yet the most of us waste—absolutely waste—enough time before the age of forty which, properly used, would make us proficient in, if not masters of, some science or trade.

I saw not long since in a paper a calculation of the amount of time wasted by the German nation in fifty years on the basis of four minutes in every twenty-four hours by the inhabitants between the ages of sixteen and fifty. These dates were selected because every man and woman is supposed to accomplish the greater portion of the work of life in the years between sixteen and fifty. The writer placed the waste at the low figure of twenty-four hours a year for each individual, and that multiplied by population of the age given is no small amount.

If all the other nations of the world waste time in the same ratio as the Germans, the question presents itself, does not the brain and sinew of the world during the best working period of life waste as much time as is actually used to the best possible advantage?

Time well and profitably employed—not wasted, by any means—is not always used in the best way for the individual.

The writer lamented the great waste of time, but made no suggestion for the remedy of the evil. He could have figured out with some degree of accuracy what could be accomplished by the proper and persistent use of the four minutes wasted per day. Let us see: A person can learn to spell a word in four minutes; that will be 365 words in one year, or 3650 words in ten years—about the number used by the average individual. The remaining twenty-four of the allotted thirty-four years could be spent in the pursuit of some science, language, trade, or in alleviating the ills of the human race.

In looking over history, we find that the men and women who have accomplished the most for themselves and the world have been men and women who knew how to employ the odd moments to the best advantage.

All are familiar with how Lincoln "kept shop" and read Blackstone and other classics of the profession; how "the philosophical studies of Franklin were carried on in the many cracks and crannies of leisure." John J. Ingalls is said to have acquired his concise use of the English language by the study of synonyms in his spare moments, and a man who occupied the chair of mathematics in a University for over twenty years gained his first knowledge of the science by studying while the team rested when plowing on his father's farm.

"Catch, then, O catch the transient hour;  
Improve each moment as it flies."

A great deal can be accomplished in four minutes by attending strictly to business.

#### A KANSAS INSTITUTION.

BY ASSISTANT F. C. SEARS.

IT was my good fortune, a short time since, to attend a farmers' institute held at Oak Grange Hall, Mission Township, Shawnee County, Kansas. While volumes might be written upon the excellent papers and other enjoyable features of the institute, it is not my purpose in this article to do so, but to describe briefly the hall itself in which the institute was held.

It is a two-story building about twenty-two by fifty feet, and is plainly but substantially built, and, from the outside, closely resembles the ordinary schoolhouse, except in having two stories. The lower room is used as a dining room, and is furnished with tables, chairs, etc., and lighted by bracket lamps along the sides of the room. The upper story is occupied by the hall proper, except that at one end is a small room in which is a cook stove and a cupboard well filled with dishes. The hall is carpeted with durable matting and furnished with chairs. At one end is a platform nicely carpeted on which is an organ, the table for the president and secretary, and a book-case well supplied with good, readable books written by the best authors. Four large hanging lamps furnish light for evening meetings. This completes the arrangements for the comfort of the people who attend here, but the founders of this institution have looked with equal care to the comfort of their teams.

On the south side of the hall is a hollow square formed by the hall on the north, effectually cutting off the wind from that direction, a high board fence on the east, and on the other two sides comfortable sheds in which teams may be left during meetings. When well blanketed—and this seemed to be the common practice—the teams may stand here as comfortably as at home, and this is saying considerable. East of the hall is a small grove of trees, set out at the time the hall was built, which has already attained sufficient size to furnish shade for out-door gatherings in summer, and, at no very distant date, will form a very handsome grove and will be—indeed, already is—one of the pleasantest features of this most pleasant institution.

A more thoroughly excellent arrangement throughout cannot be imagined. The building is used for every kind of neighborhood gathering. Here they hold, at some time during every year, one of the best institutes of the State. Here church and Sunday-school are held, and when the young folks of the neighborhood feel inclined for a frolic, they are allowed to hold dances here, every one who feels inclined attending, the old folks to look on and have a social talk and the young folks to take a more active part in the proceedings.

Why should there not be more such institutions in the State? It is true the first cost would be considerable, yet "what man has done, man can do," and if it would promote the kindly, neighborly feeling, so evident among all who gathered at the recent institute—and there is no doubt that it would—nothing that a community could do would prove a better investment.

#### Suggestions for Road Improvement.

At a recent meeting of the Farmers' Club, at Miles, Jackson county, Iowa, Mr. L. P. Parshall, County Superintendent, who has given much attention to the subject of good roads, delivered an address in which were contained some new and important suggestions relating chiefly to the necessity for giving road supervisors some special or professional training in the work assigned them. His suggestion is, that as road making is included in civil engineering, and that as the State has at its University and Agricultural College, professors in these under pay, their knowledge might be advantageously communicated to the road supervisors by assigning to them the work of addressing conventions or institutes of such supervisors, on such topics as grading and smoothing highways, the treatment of roads of sand, treatment of roads of clay, treatment of roads of black prairie soil, breadth of wagon way, wayside against center drainage, capacity and material for culverts, rip-rapping and other protection against water, elementary road law, including such questions as the illegality of turning or obstructing a natural flow of water, etc.

As a means of communicating this information, Prof. Parshall suggests the holding of road supervisors' conventions in central localities, easy of access and having hotel accommodations, the time being preferable from January 1st to March 1st, the corps of lecturers to be paid per diem while in actual service, with mileage out of State treasury, and the road supervisors themselves being paid a per diem out of the county funds for attendance. The further suggestion is made that a half day's session devoted to road-making might well be an adjunct to all farmers' institutes, the professors of engineering in the State institutions being invited, so far as possible, as lecturers, and the road supervisors being especially encouraged to attend during that session.

Prof. Parshall hopes that some such plan as that outlined by him may be enacted into law, and has strong faith that it would quicken public interest in the subject of good roads, and that it would lead to an educated and intelligent understanding of how good roads might be secured under the various circumstances, conditions of soil, etc., as they are found in the West. It is quite certain that one chief cause of the unsatisfactory character of western roads lies in the fact that there is an absence of intelligent and harmonious plan, rather than that there is not enough work done on the roads to make them good. If by some means every road supervisor in a county or State could be instructed as to the best methods to be pursued with respect to the roads under his charge, it is quite certain that with the work at his command, applied pursuant to such plans, great improvement could not fail to follow. We commend Prof. Parshall's suggestion to the thoughtful consideration of our readers.—Live-Stock Indicator.



## Information for Inquirers.

Mr. J. E. Payne, a post-graduate student, contributes to the Junction City *Union* a most interesting article on the College as he sees it,—and he doesn't wear colored spectacles, either,—which contains much valuable information in a new and readable form:—

If a spectator takes his stand on the bluffs across the Kansas from Manhattan on a summer day, he can look down on the town which covers the wide valley between the Kansas and Blue rivers. Beyond the town on the upland he will see a group of buildings which form the center of a landscape well suited for a painter's brush. In front is College Hall, and stretching to the left and right are lawns interspersed with groups of trees which contain almost every variety of woody plants which can be grown out of doors in this region. Going nearer, the main road leads to this building, which is a two-story structure beautifully proportioned. South of it is the Library Building, which is also used for the Museum. Passing northward, we see the President's house in the edge of an orchard, and the Chemical Laboratory north of the College Hall. The green houses, Horticultural Hall, and the Horticultural Station office are seen a little northwest of the President's house. Just before we enter a shaded driveway we come to Mechanic's Hall, and we see the Iron-shops and Power house in the rear of it. Passing on, the residence of the Professor of Agriculture is seen on our left, and we next come to the Armory. The barn is seen next as we drive down the hill from the Armory, and we must go and see what the

## FARM DEPARTMENT

is doing for the farmer. We enter and find Assistant Burtis busy, but he has time to show visitors what there is to see. We find the barn rather large for small farmers, but apparently well suited to the needs of as large a farm as this, containing as it does about four hundred acres of owned or leased land. We find large silos in this barn which hold enough ensilage to winter the herd of fifty-six cattle that is kept in the basement. We are much interested in the method of fastening the cattle in the stalls. The fastenings are so arranged that a whole herd of cattle can be turned loose at once by pulling a single lever. We learn that the College herd contains Shorthorns, Polled Angus, Herefords, Holstein-Friesians, and Jerseys. The piggery is stocked with specimens of Poland Chinas and Berkshires. The paved barn-yard is another feature to be seen here. It is saucer-shaped, so that the liquid manure collects in the center in a tank, and thus saved. This was made by Prof. Georgeson as an object lesson that all who see may learn. The Farm Department has about 150 acres under experiment now, and is conducting experiments with methods of planting, varieties, and culture of wheat, corn, and oats. They are also using some ground to illustrate rotation of crops.

The farm force at present has Prof. C. C. Georgeson at its head. He is ably assisted by F. C. Burtis and D. H. Otis in his experimental work. Mr. L. A. McKeen, an experienced farmer, is foreman, while F. Hulse is an efficient teamster. W. E. Thackrey, a student, has charge of the cattle. Messrs. Burtis, Otis, and Hulse are graduates of this College.

The first recorded experiments we find here were conducted by Prof. Miller in 1870-72. He made some experiments in improving seed corn by selecting ears from stalks which bore two ears; also tried subsoiling, fertilizing with lime, gypsum, and stable manures. He was followed by Prof. Shelton, who, for fourteen years before the Station was established, worked in a small way in testing varieties of tame grasses, forage plants, root crops for stock, and he experimented some in feeding farm animals. But since the United States Experiment Station has been located here the Farm Department has issued eighteen bulletins describing its work. These have been sent to the thousands of farmers who have asked for them.

## THE VETERINARY DEPARTMENT

which is located in the Armory building, was established in 1888, but did not come into prominence until 1890, when Dr. Mayo was called to the chair. He is found in his office, and while he has not much to show since the Museum has been moved away from his department, he can tell a joke which will make you laugh. The bulletins on "Staggers" in horses, "Lumpy Jaw," and "Loco" are very popular among the farmers who have read them.

While we are in the Armory we see the large drill room in which are two cannons, which some of the boys learn to "play with" when they grow tired of infantry drill. We also peep into the arsenal and see 200 stands of arms and 200 uniforms there waiting for the boys who are to come. This department is now in charge of Capt. H. G. Cavanaugh of the 13th U. S. Infantry. Here the boys are taught to walk straight, and to use their bodies properly, as well as to use guns and bayonets.

Passing across the parade ground, we visit a young orchard which is carefully cultivated. We find potatoes growing between the rows of apple trees. Mr. Sears, the foreman, tells us that they often raise two crops of potatoes on the same ground, and that the second crop of potatoes is much better for seed. We are shown through the orchard, seeing many varieties of plums, cherries, peaches, raspberries, strawberries, and grapes. There are so many varieties that, although our guide tells us the name of each, it is merely a memory of sounds we can take away with us. These fruits and vegetables are all grown experimentally, but we are informed the strawberries often yield some profit. It may be said that the

## HORTICULTURAL DEPARTMENT

has been conducting experiments on a large scale ever since it was first organized. The old College farm has an orchard on it which shows the result of an experiment begun nearly thirty years ago, to determine what varieties of apples were suited to this locality. There is also a grove of forest trees there, which was planted as long ago. At that time all horticulture and forestry was experimental here. It was doubtful whether fruit could be produced at all. But Professor Gale tried. His successor, Professor Vandemen, continued the work, and when Professor Popenoe began in 1878, he found a start made which he improved upon. He laid out the grounds and gathered trees which were supposed to be suitable for planting, tested until he found the proper ones, and the landscape is today a monument to his artistic foresight.

The students have done most of the work of setting out, cultivating, and training the trees. This work they learn in the regular course in College. They learn budding and grafting also. During the winter Professor Mason, who succeeded Professor Popenoe as Professor of Horticulture, has large classes of students at work in the green house learning how to propagate plants. By actual doing, they learn. We pass through the greenhouse, linger about the beautiful flower beds around it, and reluctantly leave this dreamland of the beautiful, and pass into the practical atmosphere of the

## WORKSHOP.

Here we first enter the carpenter shop, where we see much like what we have seen before—a large room filled with work-benches and tools used by woodworkers. Foreman House shows us around, and we see some furniture which was made by students. We are surprised. It looks as rich and well made as the costly furniture we buy in town.

When we enter the iron shops we are not so much at home among the ponderous iron machinery which is clipping pieces of iron bars and fashioning them into smooth, polished, useful machinery. Here we meet Master Mechanic Brooks, who explains the machinery and tells us how the shop is crowded every day during the school year from nine A.M. until six P.M. He shows us the blacksmith shop, containing sixteen forges, which are usually all busy.

Supt. Hood happens around and shows the foundry. He also points out several useful machines which have been planned and made by students. He tells us that all students in his department work by drawings which are furnished them—a special worker being kept all the time to plan the work. The boiler room and the dynamos which furnish power for all the machinery are next visited, and we pass on to the next building, which is

## THE CHEMICAL LABORATORY.

Here we meet Prof. Failyer, who shows us the facilities he has for handling students. There are places for ninety to work at one time, and all these places are full every term. We also have the pleasure of seeing a large collection of minerals in a room where they are kept for the inspection of students. It is a large room, filled with cases containing the minerals displayed so as to be seen easily. Prof. Failyer is ably assisted by Prof. J. T. Willard and Prof. C. M. Breese, both graduates of the College, who have been with him for years. Farmers do not expect chemists to directly benefit them, but Prof. Failyer and his assistants have improved a common sorghum so that it yields about 25 per cent more sugar now than it did when they began their work ten years ago.

Leaving Prof. Failyer and his chemicals behind, we pass over to College Hall and find Prof. Georgeson busy with his correspondence, or planning some experiments. We did not see his face at the barn, but his mind was not only there, but all about the farm. He is the unseen force which directs all that which we saw, and is around when needed.

Secretary Graham has hardly time to look up as we enter his office, but he does when he learns that he has visitors. He is so busy all the time sending out information concerning the College that he never has time to go fishing. He is the book-keeper, Secretary of the Station, Manager of the Farmers' Reading Course, and Instructor in Bookkeeping. After receiving a hearty welcome from him, we pass on and find

## PRESIDENT GEO. T. FAIRCHILD

in his office busy. He directs us so that we can find all other points of interest. The chapel is next visited, where we see seats for nearly 800. But a glance is sufficient when there are no students in, so we pass up stairs and find Prof. Walters in the

## DRAWING DEPARTMENT.

He shows the drawings made by his pupils, many of which look almost as perfect as photographs. He suggests that we should visit the

## SEWING ROOM.

We do so, and find Mrs. Winchip there. She shows us some of the neatest work we have ever seen, and tells us that she permits the girls to make their own clothes there, giving them assistance as needed. Sometimes she has as many as seventy-five dresses on hand at once.

After admiring the samples of fancy work and plain and ornamental darning we are about to leave the building when we are reminded that there is a kitchen somewhere, and, following the instincts which were very acute when we were a small boy, we go down stairs and find Mrs. Kedzie and her assistant, Miss Stokes. We are shown the

## KITCHEN.

the Aladdin oven, and many other articles that we cannot remember, and we only live in hope that if our better half wants them we shall be able to provide her with a kitchen on a small scale, as well appointed as the one we see. Mrs. Kedzie has from

20 to 70 girls under her all the time during the school year. Hers is quite a large kitchen for a few cooks, but we do not see how fifty cooks or even ten or fifteen cooks could do anything in that space if they should all get in a hurry at once.

## THE COOKING CLASS

find ready sale for all they cook by serving lunches to students four days each week during the term. These lunches are often attended by nearly 100 students. Each girl must take cooking one term and dairying one term under Mrs. Kedzie, and sewing one term under Mrs. Winchip. Many take cooking as a "special" industrial; while nearly all the girls make their own "graduating" gowns, and many their wedding dresses in the Sewing Department. Managing to get away from the Cooking Department after we have sampled all the cake, we go to

## THE LIBRARY.

which is presided over by Miss Julia Pearce who knows the name and "countenance" of every book and pamphlet in the library of 15,000 volumes. We glance at the array of literature and hope that we, as well as every citizen of our noble country, may some day have an opportunity to use that storehouse of knowledge, and that all may have the intelligence to use it properly.

From the Library we go to the Society Halls of the College. There are no secret societies here, but there are four good strong literary societies which are training the youth to meet men and women in the world. Visiting the Museum next, we find many curiosities in animal and vegetable life to hold us, but we have to pass on and visit the

## DEPARTMENT OF ENTOMOLOGY AND ZOOLOGY

which is now in charge of Prof. Popenoe, who was so long Professor of Horticulture. We find that the Professor and his assistant, F. A. Marlatt, are out "bug hunting," but Miss Kimball, the young lady who illustrates the work with her paint brush and pencil, is there. She shows us thousands upon thousands of beetles, flies, bugs, and animals until rows of Latin names begin to stand out in the air before our eyes, even when we are looking out of the window, and we flee and go up stairs to see

## THE BOTANICAL DEPARTMENT.

There we see a complete collection of Kansas plants, collections of twigs, collections of seeds, collections of grasses, collections of nitrogen-storing root tubercles, all named and labeled with long Latin names which Prof. Hitchcock and his assistant, Mr. Norton, pronounce with great ease, and seem amused at our dazed condition after they have shown us around. But they tell us that those names affected them that way once, and that we could "get used to it" if we should stay a while. This department has done much work in smuts and rusts on grain.

But, my reader, you have seen the College at rest. Look at her when the students are there. It is a clear, bright morning. The sun is peeping over the hills across the Kaw. Very few persons are seen on the streets of Manhattan or about the College. At eight o'clock the great bell in the College steeple strikes, and as if by magic the sidewalks leading to the College are filled with students. A second bell rings, and while it is ringing the hall in the main building fills with a crowd of merry young people going to chapel. The room which before had no attractions is now the center toward which the tide flows. Fifteen minutes spent in devotion and hearing announcements, and the crowd surges out, fills the walks and halls while going to the various classrooms. Then all is still again. Fifty minutes later, and at regular intervals of the same time until 1 o'clock, the walks are crowded. In the afternoon P. M. industrial, botanizing, "hunting bugs," studying for the morrow, and various other duties take the time of the students. There are no classes in the afternoon except those in the industrial work.

Many of the best students work enough to partly pay their way. It is possible, yet, for a boy with energy and intelligence to work his way through college. The good old motto regarding conduct is adhered to firmly—"Attend to business, or leave."

## The Divining Rod Superstition.

Time out of mind there have been believers in the "witch hazel" fork and its power in the hands of some specially gifted persons to locate water and the precious metals below the surface of the earth. The spirit of the present day is nothing if not scientific, and it refuses, as a rule, to believe in anything in which it is unable to see a possible relation of cause and effect. We do not mean by this that the people of the present day insist in believing nothing which they cannot understand. We only mean that in a case like that or the divining rod they are incredulous unless they can see some casual relation between witch hazel and water, or gold and silver, and some possible explanation of the alleged power of divination not depending upon individual occult powers. The tendency of modern thought upon this subject is well illustrated by a note by the editor of the *Country Gentleman*, appended to a lengthy communication on the subject of the divining rod. The *Country Gentleman* says that there is but one way to settle the divining rod superstition, and that is to blindfold the water witch quite securely and lead him repeatedly by various circuitous routes over the same territory, marking every point where the rod indicates water or buried treasure. If there be anything in the superstition, every point once marked would be invariably indicated the next time it was reached, while the rod would never respond at those points in the circuit over which it had previously passed without responding. It is believed that such a test would show the rod to be perfectly at a loss, and that it would either give no indications at all, or else it would contradict itself so wildly that even a child could see that the "mysterious influence" which operates it knows nothing at all about the earth below the surface.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## COLLEGE AFFAIRS.

## Notes from Orchards and Gardens.

Some very interesting results are shown in the records of vegetables grown in the experimental gardens last summer. Four blocks were laid off, each containing a little over half an acre. Two of the blocks were subsoiled, and the other two were not; and one subsoiled and one unsubsoiled block were irrigated while the other two were not. The blocks were treated exactly alike in other respects, and all blocks planted with the same varieties of vegetable at the same time. The results are the same with almost all the different vegetables. The unsubsoiled irrigated block gave the best returns, the subsoiled irrigated and the unsubsoiled dry block gave about the same, while the subsoiled dry block was the poorest of all. This must not be taken as a point against subsoiling. It simply shows what, by giving the matter a little thought, would naturally be expected. Where land is subsoiled in a dry season like the last and there is not sufficient rain following to soak up the subsoil, the subsoiling is detrimental for that season, since the opening of the soil allows the dry air to get in more easily. But last fall after the September rains the soil of the subsoiled blocks was in much the best condition, and it is confidently expected that this year they will stand ahead of the unsubsoiled ones. A fine lot of parsnips has just been dug from these blocks and it is interesting to note the difference in the roots from the different blocks. Those from the subsoiled blocks are much longer and smoother and less inclined to be branched.

The old line of inch water-pipe west of the strawberry bed is being taken up. It will be replaced by two-inch pipe, and the old pipe will be used to extend the line farther north between the experimental vineyard and raspberry plantation. This will bring more of the garden under irrigation, and will be very convenient in a season like the last when the experimental vineyard must be watered to prepare the crop.

The first planting of potatoes is being made today. It consists of seven varieties, five pounds each first and second crop, and five pounds each of seven other varieties. This is just a week later than the first planting of last year, but the season is fully that much behind last.

A careful examination of the peach buds in the College orchard fails to reveal any which have not the fatal black spot in the center, though Mr. T. C. Wells, a short distance west of the College, reports that some of the buds on his trees are still alive.

The Department has some very fine one-year-old grape vines, including most of the varieties contained in the experimental vineyard. Anyone who wishes a few choice varieties can be supplied at reasonable rates.

Tomato, cabbage, and cauliflower seeds have been planted in hot-beds, and are already up and well started. Some early varieties of cabbage, started in the propagating houses, have been set in cold frames, and will make fine stocky plants in time for the earliest planting in the open ground.

The Department's collection of woods has been enriched the past week by a fine lot of specimens collected by Mr. R. H. Kimball in California.

F. C. SEARS.

## Shop Notes.

The third run of the term was made in the foundry Friday. Among the articles cast were blacksmith forge fittings, grate bars, manhole rings for the steam line to the Armory, parts of drill presses, and numerous other articles for repairs.

Some of the foundry boys are making forges for their own use, at home on the farm. They are built after the same pattern as the forges in the blacksmith shop made by Sturtevant of Boston, and are a good reliable article, as has been proved by constant use.

The blacksmith classes are turning out some very neat work. Among other things made by them are the shifter bars for the two fifty horse-power clutches used in the power room. It is such work as this that shows their ability to do neat work and to work to the mark.

The woodwork department has lately turned out a lot of about fifty T-squares which are very attractive in appearance and "cheap as dirt." They can be sold for fifty cents and make a fair profit. They are built up of white pine, walnut and cherry, with a solid walnut head.

A machine for making oxygen has about been completed in the machine shop. It consists of two cylinders, one fifteen inches long and seven inches in diameter for generating the oxygen, the other four feet

long and five inches in diameter which will contain water through which the gas passes for purification. The reason for making the gas here in the shop is to save excessive express charges from Chicago and to be sure of having it when wanted. The gas is used in the College stereopticon to furnish the oxy-ether light which this instrument requires.

The department, in remodeling the steam system at the Armory, have changed it to a "one-pipe" system which works very satisfactorily.

The work of the Third-years in mechanics is now drawing to a close—they are in the review.

The Fourth-year physics classes visited the power plant this week to examine into the mysteries of the electric dynamo and motor. E. H. WEBSTER.

## GENERAL LOCAL NOTES.

Mr. W. R. Smith, editor of the *Lecompton Sun*, visited College Monday in company of C. B. Selby, Fourth-year.

The entertainment in Chapel yesterday afternoon was afforded by the second division of the Third Year Class in original productions according to the following program: "A Proposed Reform," R. S. Kellogg; "Originality," Harriet Vandivert; "Hypnotism," O. A. Stingley; "Voices of Nature," Elsie Waters; "The Farmer's Influence," C. H. Stokely; "Deception," C. Snyder; "The Traveler," C. S. Evans; "Oratorical Contests," Mary E. Wilkin; "Intolerance," M. G. Spaulding.

Dr. Mayo was called to the neighborhood of Alta Vista last week to investigate an infectious disease of cattle which affects a herd of several hundred head near the head of McDowell Creek and extends south among herds into Morris County. Several deaths have occurred. A post-mortem examination revealed what Doctor Mayo believes to be pleuro-pneumonia, and this opinion is shared by Dr. Pritchard of Topeka, the retiring State Veterinarian. Governor Morrill has notified the Bureau of Animal Husbandry at Washington, and Chief Salmon has ordered a department expert to investigate and report.

That the efforts of Manager Wareham to provide a first-class lecture course during the past winter were appreciated in part, at least, is shown by the considerable audiences which have greeted the various attractions presented. The course thus far has been a good one, and well worth a greater patronage than has been accorded it. Manager Wareham is an old college boy himself, and seems to know what kind of entertainments a college audience most enjoys. We hope he may be induced to make the lecture course a permanent thing, and that the patronage given him will warrant a continuance of high-grade entertainments.

## GRADUATES AND FORMER STUDENTS.

C. J. Peterson, '93, who is teaching near Paxico, attended the Webster Exhibition.

Eight graduates and nineteen former students attended the meeting of the Riley County Teachers' Association at Randolph.

Elizabeth Edwards, '92, and Jennie R. Smith, '94, enjoy the distinction of being chosen teachers in the Model School to be held in Manhattan this summer in connection with the Institute.

J. D. Riddell, '93, made a pleasant call on Wednesday last. He has just completed a year's work in the Kansas City Medical College, and now goes to his home in McPherson County for rest.

Jas. W. Berry, '83, was the successful bidder for the contract to build the new cottage at the Girls' Industrial School at Beloit, lately awarded by the State Board of Public Works. Mr. Berry stopped at the college on Saturday last for the first time in five years, and was the guest of Secy. Graham over Sunday.

The Bloomington (Indiana) *World* of March 4th records the death of Willis Chamberlin, Second-year in 1886-7, of peritonitis. Since leaving here in the late 70's for California he graduated from a San Francisco business college, held a place as auditor in a railway ticket office there for years, and in 1891 entered Leland Stanford University where he studied English for three years. At the time of his death he was at Indiana University to complete his course and teach English and journalism.

## Farmers' Institute at Pleasanton, March 7th and 8th.

Owing to the favorable weather for sowing oats, and the anxiety of many farmers to improve the time, the attendance at this institute was not so great as it would otherwise have been. The program was well prepared, and those who listened to the ably written papers and took part in the animated discussions felt well repaid for the time spent. The opening paper on Thursday afternoon was upon "Small Fruits" by Mr. J. R. Howard. Farmers were urged more generally to plant and care for a collection of small fruits that would supply the family table with fresh and preserved fruit throughout the year, and the helpful suggestions as to culture came from a man who wrote from experience. The raising of "Irish Potatoes" was presented by Mr. Wm. Mackey, and proved to be a topic of much interest. In the evening Mr. J. W. Primmer's paper on "Flowers and Plants" was full of helpful suggestions, and a visit to his greenhouses showed a collection of vigorous, healthy plants which it was a pleasure to see. S. C. Mason's talk on "Small Fruits by Irrigation," illustrated by charts and diagrams, was received

with an interest which shows that, even in this favored section of the State, lack of moisture at the critical time has caused the loss of much valuable fruit. A thoughtful essay on "Home Adornment" by Miss Mary Kuhn, and a well-rendered recitation by Miss Mary King completed the evening program. Friday morning was devoted to a valuable paper by Hon. J. W. Tucker on the "Difficulties in Growing Orchard Fruits, and their Remedies;" "Humbugs in Horticulture" by M. J. W. Latimer, a nurseryman of much experience; and a very thoughtful presentation of "Wheat Culture" by Mr. J. Kennedy. The afternoon program was crowded, and full of interest from start to finish. "Grasses," by Hon. O. E. Morse, was a paper which should be read and studied by every farmer in Eastern Kansas. "Good Roads" were "worked" in a manner at once humorous and truthful, by Mr. I. H. Stearnes, and a much neglected subject discussed in his paper on "Commercial Fertilizers" by Mr. Wm. Watson. Dr. Mayo's lecture on "Some Contagious and Infectious Diseases of Animals" excited much interest and discussion, and closed a very profitable program. Steps were taken to effect a permanent organization, and the determination expressed to begin early next year and have a rousing meeting. S. C. M.

## The Farmer's College.

This fine institution, the pride of every Kansan who comes in contact with it, is not so well known to the outside world as it should be, but still it stands at the front wherever known.

We print in another column a descriptive article written by Mr. J. E. Payne for the *Junction City Union*. Mr. Payne has presented some points not usually mentioned by writers, and in a way that makes the description all the more valuable, and it will be a reliable source of information to those who read it.

When it is generally known, as curiously enough it now is not, that this is free to all residents of Kansas, the institution will command its thousands of students as it now does its half-thousands.—*Manhattan Homestead*.

## COLLEGE ORGANIZATIONS.

*Student Editors*.—T. W. Morse, G. W. Fryhofer, Maud E. Kennett.

*Hamilton Society*.—President, C. A. Johnson; Vice-President, W. I. Joss; Recording Secretary, C. E. Pincomb; Corresponding Secretary, W. L. Hall; Treasurer, M. L. Heckert; Critic, B. W. Conrad; Marshal, A. W. Staver; Board of Directors, R. J. Barnett, C. S. Marty, G. C. Hall, J. Poole, L. G. Hepworth. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

*Alpha Beta Society*.—President, J. B. S. Norton; Vice-President, Gertrude Havens; Recording Secretary, R. W. Rader; Corresponding Secretary, Nora Fryhofer; Treasurer, A. C. Havens; Critic, A. E. Ridenour; Marshal, E. P. Smith; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon at 2:30 o'clock. Admits to membership both ladies and gentlemen.

*Ionian Society*.—President, Ethel Patten; Vice-President, Ada Rice; Recording Secretary, Gertrude Stump; Corresponding Secretary, Myrtle Hood; Treasurer, Emma Finley; Marshal, Hope Brady; Critic, Florence Corbett; Board of Directors, Laura McKean, Flora Day, Mabel Selby. Meets on Friday afternoon at 2:30 o'clock. Admits to membership ladies only.

*Webster Society*.—President, T. W. Morse; Vice-President, F. E. Rader; Recording Secretary, J. B. Dorman; Corresponding Secretary, E. G. Gibson; Treasurer, W. B. Chase; Critic, W. H. Steuart; Marshal, J. R. Henrey; Board of Directors, G. C. Wheeler, C. D. McCauley, F. E. Uhl, F. R. Jolly, E. B. Patten. Meets on Saturday evening at 7:30 o'clock. Admits to membership gentlemen only.

March 15th.

The Alpha Beta Society was called to order by President Norton. The program opened with a quartet by Misses Smith and Palmer and Messrs. Clothier and Smith. Inez Palmer led in devotion. C. C. Rambo then entertained the Society with a cornet solo, after which May Willard gave a very interesting biographical sketch of Charlotte Bronte. A declamation, entitled, "Everyday of Life," was delivered by Inez Manchester, after which Messrs. Smith, Fryhofer, and Ridenour sang a trio. The impersonation by G. W. Fryhofer afforded considerable amusement for the Society. The question for debate, "Resolved, that the government should have power to restrict the press," was argued on the affirmative by Clate Rambo and Grace Secrest, and on the negative by E. A. Powell and W. H. Phipps. An interesting edition of the *Gleaner* was presented by W. A. McCullough, editor. The vocal duet by Mary Paddleford with banjo accompaniment brought forth hearty applause from the audience. After recess R. W. Clothier gave a violin solo, accompanied on the organ by Nora Fryhofer. Extemporaneous speaking was opened by Inez Palmer, A. H. Morgan, and E. A. Ridenour. The subjects they presented were well discussed by the Society. An organ solo by Mary Finley closed the program. N. F.

March 15th.

The Ionian Society was called to order at the usual time by President Patten. After singing, Florence Corbett led in devotion. Dora Thompson, having resigned her office as critic, Florence Corbett was installed to that office for the remainder of the term. In the absence of the Marshal, Emelia Pfeutze was appointed to take her place. The name of Ruth Brockway was added to the roll. The program opened with a well-prepared invective by Daisy Day, having for her subject "The fads and follies of the 'A. B.'," after which Minnie Walmer entertained the Society with an instrumental solo. We then listened to an interesting oration by Laura McKean, after which Jennie and Mabel Selby sang a duet, "Come where the rosebuds now sleep." A good edition of the *Oracle* was read by its editor, Edith Lantz, having for the motto, "The girls were not locked in the gymnasium, but the boys were locked out;" this she explained in her elucidations which followed. An amusing feature of the program was an impersona-



tion by Hortensia Harmon. Next came the debate on the question, "Which can we best do without, doctor or lawyer?" which was argued on the affirmative by Minnie Walmer and Winifred Houghton and on the negative by Nannie Williams and Laura McKeen, the latter being appointed as a substitute for Emelia Pfeutze. The judges, Misses Mudge, Selby, and Duffy, decided two to one in favor of the negative. The debate was followed with a vocal solo by Gertie Lyman, after which the Society listened to an interesting discussion by Ada Rice and Maud Kennett, an instrumental solo by Gertrude Rhodes following. The program was closed with a parliamentary quiz by Minnie Pincomb. Miss Mudge, a former Ionian, being with us, was asked to speak, which she did in a pleasing manner. Miss McDowell, also a former Ionian, was asked to come in and speak to us. She came in and encouraged us by saying that she would come again and would then make a speech that would be worthy of the Ionians. After the regular amount of business the Society adjourned. M.H.H.

#### Farmers, Give Your Boys a Chance.

Farmers, give your boys a chance, and when they go out into the arena of life they will bring honor to your gray hairs. Give them a chance, for it is your duty so to do. Give them a chance equal to that which is given to the boy who goes to study for the professions, and they will give a good account of themselves as farmers and citizens. You owe this to them by virtue of kinship; you owe it to them as parents; and you owe it to them as citizens of the commonwealth.

By giving them a chance we do not mean laying up for them broad acres to be handed over to them as a heritage when you, as parents, cannot enjoy it any longer. The possession of acres is one thing, and the capacity to enjoy them is another. A man may be the owner of a wide domain handed down to him by his parents, and yet his intellect may remain so unexpanded that he cannot take that enjoyment from his work which he otherwise could. Nor has he the capacity for enjoying many of the true pleasures incident to his calling, if he only understood its secrets better.

By giving them a chance we do not mean encouraging them to roam away to some untried land in search of fame and fortune. These desires come more or less to all young men, and some parents are indiscreet enough to encourage such romantic and visionary notions. Others go to the opposite extreme, and, by dint of parental authority, positively forbid them to leave home so long as they are minors. There is a better way. It would be to convince them, first, that "distance lends enchantment to the view," and to show them, in the second place, that when they leave the farm they leave a calling that gives them wider scope for the exercise of intellect than any material calling that engages the attention of men.

How shall they be convinced of this? that is, how shall such views of the importance of their calling be imparted to them? By giving them an education which has a direct bearing upon the pursuit of agriculture. The opportunities for so doing are few, but they are not entirely wanting. We have an agricultural college in our country where such an education can be obtained. But we have only one. Let us educate our boys at some such institution, and, when we have done so, our contention is that we have given them a chance.

By giving them a chance we do not mean giving them an education of a character that is likely to lead them away from the farm. Such is the education that they receive in a college in the ordinary sense in which the term college is used. And when we speak thus, we do not wish to be understood as speaking slightly of those colleges. They are doing an excellent work. We have none too many of them. But in the very nature of things it cannot be otherwise. They have almost nothing to say about agriculture. When a young man attends one of these for two or three years, farm labor ordinarily becomes distasteful to him; hence, in a large majority of instances, he decides to follow some line of work other than farming.

But, it may be that we cannot send them to an agricultural college. Circumstances may forbid. But though we cannot, there are many things that we can do. We can cover our tables winter evenings with agricultural periodicals and books, bright, interesting, instructive, and reliable, and we can read these with them, and encourage them to read them for themselves. Nor will it do to say that we cannot do this, for we can. It will take only half the produce of a cow per year to purchase the annual supply of fresh and wholesome intellectual food. The progeny of one sow will do it, though sold at weaning time or shortly after. It would be better to go without luxuries on the table many a time than to go without this supply of mental food.

Farmers, give your boys a chance. There is only one period in life when they may get an education that will fit them for their life work, and this soon runs away. It is positively cruel to starve the minds of the boys while this time is hurrying on, for soon it will be away, and when once gone, like the waters that have passed, it never comes again.

If the chance is offered and persistently refused, the responsibility is lifted from the shoulders of the parent. It is then laid upon the boys themselves. If they deliberately choose to starve the inner man, the effects are no less than if the parents were responsible, but the conscience of the parent is then relieved. He has given his boys a chance, and they have made the huge mistake of neglecting to profit by the opportunity.—*Canadian Farm Journal*.

#### Brains on the Farm.

Governor Northern has a very sensible article in the *Southern Cultivator* on the subject of brains on the farm. Governor Northern tells us of an eminent lawyer who, as the result of experience on the farm, arrived at the conclusion that it took more brains to manage his farm than to manage his law business. For he succeeded best in law. This, our distinguished writer concludes, was rather a matter of aptitude than of brains. After some discussion of the question, he says:—

"It is a mistake to adopt the generally received opinion that any man can successfully farm if he will only stick at it and put into it a plenty of elbow grease and personal sweat. I do not believe this to be any nearer true than that any man of ordinary intelligence can practice physic successfully, simply because he stays steadily by the bedside of his patient and industriously administers medicine at every apparent change of symptom.

"Just so long as we believe, and practice the belief, that any stupid dolt that never had an original idea in his life and has given evidence of no higher capacity than to hold a plow and beat and starve a mule, will make a good enough farmer to till our lands and make our material wealth, just so long will we invite ruin to our agriculture and desolation for the best interests of our sections. We must away with such suicidal practices and put more brains on our farms. Let muscle do the work, but intelligence direct the management and methods."

Governor Northern brings out a great fundamental truth in the following sentence:—

"In the soil God has given an inheritance not exclusively to the generation that now butchers it on our farms, but to generation after generation to follow, and we have no more right to turn loose upon it such a savage slaughter that allow hordes of quack doctors to become unrestrained venders of poisons to the destruction of human life.

"There are few more pitiable industrial spectacles than that of a farmer reducing the fertility and character of his farm. It is a standing advertisement of his mental incapacity and sluggishness and his entire failure to seize upon the grand fact of a very plain fundamental obligation of life. One who is satisfied to leave the world poorer than he found it has not the ring of true manhood in him. The whole class of soil robbers and farm despoilers are not only, as Mr. Northern concludes, traitors to their country, but they are more—they are traitors to nature and to their God. We want a race of men and women on the farm far above the low ideal of agriculture that governs many farmers."

#### Believing What One Reads.

If we were to believe all that is said by politicians and newspapers we would think the American people were in a condition of bankruptcy, and the country on the eve of revolution, and that overwhelming disaster stood at the very doors of every homestead. As, however, all that glitters is not gold, so all that sounds trite and plausible and both forceful and true when coming from one political party or newspaper against another is not to be taken as pure and undiluted gospel. The condition of our affairs, commercially speaking, is indeed bad; and the legislative and executive branches of the Government at loggerheads in regard to financial legislation; but the country isn't going to the demerit bow-wows because thereof, even though the masterful energies of men of autocratic minds would make one almost think so.

The fact of the matter is, one-half of what is published is not true, and a goodly portion of the other half the merest ramblings of sensation-loving minds and political gossips. There may be political scoundrels in our national life, but the intelligent reader will discover, when he thinks of it, that they must be few and far between or their practices would be exposed to the world. Men sent to Congress cannot afford to be other than honest, at least in their convictions and conduct, no matter how much they may rant and rave and tear, or the other fellows would find them out, and for the sake of political supremacy denounce them. What we have to do is to attend to our own affairs as best we can, and to do that well will take pretty nearly all of our time, especially if we are to make better and larger crops, and so manage and market them as to get higher prices and more money.—*Colman's Rural World*.

#### Transplanting to Country Homes.

The work of transplanting unemployed or poorly employed individuals and families from congested centers of population into agricultural districts, which was begun and successfully prosecuted last spring under the auspices of the Civic Federation of Chicago, has been resumed under the same superintendence by the bureau of labor and transportation. A large percentage of the unemployed, both male and female, are willing to go, and there can come to them no boon so great as to be thus transplanted. In such work many become farm help, many tenants, many purchasers on the installment plan, and some go to colonize, or on homesteads. The work is a help to self-help. It converts consumers into producers. The bureau is a bit of inexpensive machinery which stands as an intermediary between the men who seek and the men who offer employment, between individuals also and railroad corporations, and so arranges matters on a mutual benefit basis that neither the one nor the other is conscious of either receiving or giving "charity," and yet it is philanthropic in a very true and broad sense.—*Chicago Inter Ocean*.

#### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

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**ELLIOT & GARRETSON,** Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

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##### WATCHES, JEWELRY.

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**D. R. C. P. BLACHLY,** Dentist. The famed Odontunder used for painless extracting.

##### PHOTOGRAPHS.

**DEWEY,** the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

##### LIVERY.

**PICKETT & LONG'S LIVERY STABLE.**—Everything new, strictly first-class. Special attention will be given to student trade. Prices that will suit you. Stable three doors east of Commercial Hotel.

##### MEAT MARKET.

**SCHULTZ BROS.** offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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**6 BATHS,** \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, Next door to Postoffice.

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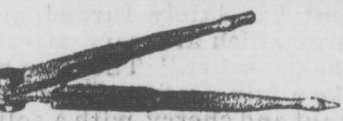
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#### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address **O. P. HOOD, Supt.,** Manhattan, Kan.



# THE INDUSTRIALIST.

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IRA D. GRAHAM, A. M.,  
Secretary, Instructor in Book-keeping.  
OSCAR E. OLIN,  
Professor of English Language and Literature.  
MRS. NELLIE S. KEDZIE, M. Sc.,  
Professor of Household Economy and Hygiene.  
MRS. ELIDA E. WINCHIP,  
Superintendent of Sewing.  
OZNI P. HOOD, B. Sc.,  
Professor of Mechanics and Engineering,  
Superintendent of Workshops.  
ALEXANDER B. BROWN, A. M.,  
Professor of Music.  
JOHN S. C. THOMPSON,  
Superintendent of Printing.  
FRANCIS H. WHITE, A. M.,  
Professor of History and Political Science.  
CHARLES C. GEORGESON, M. Sc.,  
Professor of Agriculture,  
Superintendent of Farm.  
ERNEST R. NICHOLS, A. M., \*  
Professor of Physics.  
NELSON S. MAYO, D. V. S., M. Sc.,  
Professor of Physiology and Veterinary Science.  
JULIUS T. WILLARD, M. Sc.,  
Assistant Professor of Chemistry.  
ALBERT S. HITCHCOCK, M. Sc.,  
Professor of Botany.  
SILAS C. MASON, M. Sc.,  
Professor of Horticulture,  
Superintendent of Orchards and Gardens.  
MISS JOSEPHINE C. HARPER,  
Instructor in Mathematics.  
MISS ALICE RUPP,  
Instructor in English.  
HOWARD M. JONES, A. B.,  
Rhetorical Instructor.  
HARRY G. CAVENAUGH, Captain 13th U. S. Infantry,  
Professor of Military Science and Tactics.  
THOMAS E. WILL, A. M.,  
Professor of Political Economy.  
MISS JULIA R. PEARCE, B. Sc.,  
Librarian.

\*On leave of absence for one year.

##### ASSISTANTS AND FOREMEN.

- C. M. BRESE, M. Sc., Assistant in Chemistry.  
GRACE M. CLARK, B. Sc., Stenographer in Executive Office.  
LAURA G. DAY, B. Sc., Assistant in Sewing.  
RUTH T. STOKES, B. Sc., Assistant in Household Economy.  
WM. BAXTER, Foreman of Greenhouses.  
W. L. HOUSE, Foreman of Carpenter Shop.  
H. K. BROOKS, Foreman of Iron Shops.  
L. A. McKEEN, Foreman of Farm.  
C. A. GUNDAKER, Engineer.  
A. C. McCREARY, Janitor.  
JACOB LUND, M. Sc., Fireman and Steam-fitter.

##### ASSISTANTS IN EXPERIMENT STATION.

- F. A. MARLATT, B. Sc., Entomology.  
F. C. BURTIS, M. Sc., Agriculture.  
D. H. OTIS, B. Sc., Agriculture.  
F. C. SEARS, B. Sc., Horticulture.  
J. B. S. NORTON, Botany.  
F. W. DUNN, B. Sc., Irrigation.

#### HIGHER INSTITUTIONS.

BY PRES. GEO. T. FAIRCHILD.

AN article under the above caption, intended only to compare attendance upon general disciplinary courses in the arts and sciences, was evidently misunderstood. Because of a grouping of all other courses under the extremes, "common school studies or special schools," a very unfortunate inference was drawn, as appears in the *Students' Journal* of the State University. It seemed to some that the article in question was meant to disparage the University in the comparison. No such thought was in the mind of the author, nor has any such thought ever for a moment entered his mind with reference to any of the institutions named.

The State University holds its place as the State University because it offers to the young people of the State the highest and largest opportunities for culture. Its special schools are just what ought to constitute a larger part of its work. It is a reason for congratulation that the annual attendance shows a constant enlargement of these schools of law, pharmacy, and special arts. Every step in this direction is genuine advance, and must be gladly welcomed by every lover of the State institutions. At the same time, in any comparison of annual attendance of students, this broad range of courses must be taken into account. The grouping given included under "higher general courses" for the full list of institutions, all who were beyond common school studies in a general disciplinary course, whatever the name of the course. No comparison of courses was intended. It is true that high school graduates fitted for the University School of Arts may enter the second-year of the course in the State Agricultural College, and so graduate in three years; but the course is in no sense a mere equivalent to that of any high school.

It is no disparagement of the State Normal School and its noble work for the teachers of the State to show the numbers of students in review of studies given in the common schools and of students in higher courses. The State Normal School could not do its legitimate work without such conditions in its first year. Yet any comparison of numbers with other institutions must make the obvious distinction between such training and a higher course of general discipline.

For the other colleges named a similar distinction was necessary, because most of them have elementary preparatory classes, and many have special commercial and normal training classes. No desire to compare their courses in any other respect with that of the State Agricultural College, the State University, or one another was in the mind of the author of the table. Attendants upon the last two years of the classical preparatory course of these institutions were counted in the numbers of students in higher courses.

In conclusion, it is proper to say in a personal way that I have never sought in any utterance, public or private, to build up the State Agricultural College at the expense of the other State institutions. I have encouraged graduates and other students to enter upon the higher courses of the University and the training of the Normal School whenever their inclinations led in those directions. The three institutions are in no sense rivals in the same field, and I have never treated them as such. I believe heartily in them all. With equal earnestness I can say that I believe there is room for the denominational colleges of the State. Into nothing that appears under my name must disparagement of other institutions be read.

#### THE "FUNNY MAN."

BY PROF. HOWARD M. JONES.

IN olden times it took a smart fellow to be a fool. The court jester, or fool, as then called, was indispensable. He had to tell a good story when called on; to sing a song at a moment's notice, often improvising for the occasion; to know when to retort and when to keep still; in fact, he had to have that rare gift of saying the right thing at the right time in the right way. The varied and peculiar talents of the mediæval fool would make their possessor today a leader in society, perhaps a successful diplomat.

The descendants of the fool are still to be found; clowns and professional humorists are numerous. They do the "fool act" for revenue only. They know what the groundlings want, and they supply it. "Laugh and grow fat," is good advice for us over-worked Americans. The humorist is better for

health than the doctor. That the relaxation which comes from mirth is an imperative demand is evinced by the increasing supply of humorous men and papers. As some nations turn to song or poetry or art for their avocation, so we turn to humor. Foreigners are struck by the prominent development of humor in the American. Dr. Conan Doyle speaks approvingly of our humor; that is, our best humor.

But do not confound humor with the sayings of the "funny man." He fascinates some, especially the young; but beware of him! He is a dangerous character. He is the arch corrupter of good taste. To raise a laugh, no matter how, is considered, in some quarters, a great triumph. We laugh at wit, we more often laugh at the lack of it. The one who is constantly straining to make fun is in imminent danger of being chronically silly. Once inoculated with the itch of buffoonery, the patient is beyond help. He seems oblivious to the fact that those who do laugh are laughing at him, not at what he says—a most important distinction. No one who aspires to weight and influence in the world cares to develop a personality inherently ridiculous—incongruous; in other words, no one wants to be a monkey when he might as well be a man.

In college, where the continual conflict of bright minds is apt at any moment to produce charming scintillations, the temptation is especially strong to essay the "funny act." Often characters otherwise admirable succumb and are blemished. The collegian is more apt than ordinary mortals to go to extremes. The longest-haired fellow on the street is often—in fact, usually—a lower classman. Sometimes the funniest fellow in the crowd is an upper classman. To be funny is a college temptation, yet some of our brilliant wits have been most sparing, appreciating the fact that their influence would be in inverse ratio to their use of the comic.

Recently, a writer whose acquaintance with the personnel of Congress extends over many years has pointed out that the rule, the almost invariable rule, is that the funny member has no weight. They laugh at him and pay no more attention to him. What he supports is killed. Mr. Reed may be cited as an exception; but his terrible thrusts partake more of tragedy than comedy. Lincoln's wondrous flashes were inevitable, as a relief for a sad heart, heavy-laden, but they were with him incidental; his was too great a soul to be striving after funny effect. No; wit is not kept constantly in stock, in great big chunks "served while you wait;" rather it is like the lightning's flash or the rainbow's beauty—occasional.

The poor victim whose mania is to be constantly funny must substitute for real wit, flippancy, irreverence, exaggeration, and unadulterated assinnity. The speaker who surrounds himself with a wholesome atmosphere of humor is a blessing; the writer who has in his quiver the neat double play, the sly but kindly thrust, the apt allusion, the bright epigram, is a power; but the incurably funny man is an unmitigated bore. He has destroyed his influence, perverted his mental processes, corrupted his manners, and lost the charm and power which come from normal conduct. The plain common sense of the people exclaims, "Don't get funny."

#### WITH THE ARMY OF THE POTOMAC. IV.

BY H. G. CAVENAUGH,  
(Captain 13th U. S. Infantry).

SKIRMISHING along our front commenced about daylight on the third, and continued with occasional shots from artillery until about 10 o'clock A. M., when all firing ceased, and an ominous quiet fell upon both armies. About 2 o'clock P. M. this silence was suddenly broken by a report of a gun near the seminary where General Lee had his headquarters, and was followed immediately by a simultaneous discharge from all the batteries along the enemy's line, west, north, and northeast of our position. This cannonade was probably the most violent that was ever heard on this Continent; it was kept up with shot and shell on the center of our line, which was the position held by the Second Corps. It is hardly necessary for me to say it was answered by all the guns along our front, as well as from many batteries from our reserve artillery.

General Hunt, the chief of artillery of the Army of the Potomac, had posted them wherever practicable, but our position was so restricted that but eighty guns could reply effectually. It has been ascertained that along the front of the Rebel Generals Longstreet



and Hill's corps, one hundred and fifty cannons of different calibre bore upon and fired on our line.

About 3:30 o'clock P. M., it was ordered that our firing should gradually cease. Soon after this the fire of the enemy also ceased. A column of attack had been formed in a woods in our front, which about this time commenced to advance, and in plain view and to the admiration of almost our entire army, charged our line. The distance to be passed over by it was about one and one-half miles. We were cautioned to hold our fire until the column, which was formed in three lines of battle, preceded by a heavy skirmish line, was about to climb the fences along the Emmetsburg road, which was distant from us about one hundred and fifty yards. When it reached the fence the column was thrown into some confusion, and it was during this time that we opened fire. Notwithstanding the sheet of flame which burst from our line from both infantry and artillery, the enemy gained to within about forty yards of our line of works in our immediate front, and succeeded for a short time in gaining and penetrating the line a short distance to our left, but for only a few moments, as the second line and all troops in the immediate vicinity rushed to that point; the few who did reach the line were all killed, wounded, or captured.

All the brigade commanders of Pickett's Division were killed or mortally wounded, General Armistead within our lines. Of the fifteen field officers who accompanied the column but one escaped unhurt, while of its rank and file three-fourths were killed, wounded, or captured. The attacking force numbered about fifteen thousand.

The number of prisoners taken by us, that is, by my regiment, was much greater than the whole number of men in the regiment, and although we were credited in the official records with having captured three Confederate flags, I know of my personal knowledge that we had five. The men of my regiment, the 1st Delaware Volunteers, at this time numbered about two hundred and twenty-five.

This charge will ever be known in history as "Pickett's Charge" and also as "the high-water mark of the rebellion." The division is said to have contained the best troops in General Lee's army, mostly all Virginians. They had not, up to this time during this battle, been engaged, were full of enthusiasm, and eager for the fray. It was supported on its right-flank (or should have been) by the Confederate brigade of Wilcox, and on its left by Heath's and Pender's divisions.

The loss of the enemy in our immediate front was exceedingly great, the ground being literally covered with dead and wounded. What added to the great mortality was caused probably by the men having collected many extra rifles and a large amount of ammunition behind our breastworks, the rear rank loading while the front rank fired (it will be remembered this was before the days of breech-loading, rapid-firing rifles); also to the fact that a new and almost full regiment—the 12th New Jersey—was posted adjoining our left which was armed with smooth bore Springfields carrying buck and ball.

The number of men in the Army of the Potomac was about 90,000—that of the Confederate Army, known as the Army of Northern Virginia, was about 85,000.

The number of men killed, wounded, captured, and missing from our army was by corps as follows: 1st Corps, 6059; 2nd, 4369; 3rd 4211; 5th, 2187; 6th, 242; 11th, 3801; 12th, 1082; Cavalry Corps, 852; Reserve Artillery, 242. Total, 23,045.

The losses of the army of Northern Virginia was about the same number in the aggregate, the total of both armies being 48,000.

In conclusion, I will say that it is almost impossible to conceive a degree of efficiency and bravery on the part of troops more exalted than was shown by the men whom I saw at that time resisting and repelling this desperate assault of the enemy, who manifested a determination, courage, and skill no less admirable.

#### Good Work of the "Fancy Farmers."

A western contemporary, in a recent article, divides farmers into three classes, based on the objects they have in view. First, fancy farmers, or those who aim to get the greatest possible yield regardless of expense; second, those who aim to get the greatest profitable yield; third, those who aim to get as good results as they can without labor, expense, or brains. This is a good classification, says the *Ohio Farmer*, but in his remarks the writer slights the first class and passes by it by saying, in substance, that there is nothing in it but glory, and glory will not pay debts nor build houses. And yet the real farmers of this country—who all belong to the second class—are indebted largely to the fancy farmers of the coun-

try—the men who make farming their avocation, their means of enjoyment.

The wealthy men who spend their surplus money in this wholesale manner should be honored for it, even though the object sought is personal gratification and not the promotion of agriculture. It is infinitely better than any form of dissipation or indulgence in those things that injure health, destroy character, and exert a baneful influence upon society at large.

#### The Farm Library.

The farm library reveals the mental tastes and attitudes of the owner, as well as his present business or profession. Solomon said in his day that of making books there was no end. If there was no end then, there is no end in sight now, for if there is any one thing that characterizes the present age, it is the multiplicity of books and the abundance of reading matter. No professional man aims to keep up with the literature of the present day. He must necessarily select only a small section of it, and even then he must be diligent if he keeps abreast of the times. The farmer's library is of necessity limited, and for that very reason it should be carefully selected, and should be adapted to his wants and that of the family. In these days most of the reading of men outside the professions is made up of newspapers, a great majority of which are strictly newspapers, and are of no value in the city when the news is a day old, or in the country when it is a week old. Newspapers, however, cannot supply the literary wants of the farmer who wishes to keep abreast of the times. He wishes something more permanent, and that should be selected with a view to his own tastes and the wants of his family. We say of his "tastes," because these tastes are already formed, and it is his right and his duty to gratify them. We say the "wants" of the family, and especially the younger members, for what their tastes may be in the future, depends very much upon the character of the literature with which the farmer supplies them. Every farmer's library should of necessity contain books on agriculture and on those particular lines of agriculture which he is at present following or in which he is otherwise interested. One of his first purchases should be a farm encyclopedia, not as a book to read, but as a book of reference, to which he can go when necessary and find reliable information with reference to any subject connected with agriculture in which he is interested. In addition to this he should have a book on stock-feeding, and on the breeding and feeding of the particular class of stock in which he is engaged, and one that will give him reliable information on the subject of manures and fertilizers. He should have a book or books that deal with general agriculture, such as the preparation of the soil, the best works on conserving fertility, moisture, drainage, farm buildings, etc. In course of time one can make valuable additions to a library by subscribing for some first-class agricultural paper, and then keeping a file of each year, have it bound into a volume with index, so he may be able to turn at pleasure to any class of subjects which has been treated of during the year. The value of an agricultural paper which keeps abreast of the times and discusses questions broadly that interests farmers, lies in this, that it shows the trend and history of the best farm thought on the subject covering the period of the years of its publication.

The farmer, however, should take a broader view in selecting a library. His boys and girls will be very largely what his library makes them. The correct use of the English language is acquired, not so much from the use of grammar at the public schools as from the conversation of the family and the papers that are read in the home. The boy or girl who hears nothing but the best language spoken, will always speak the best, whether he knows a rule of grammar or not. The boys or girls who read nothing but high-class books and papers will, when they come to express themselves in writing, adopt very closely the style of the books and papers that they have read, hence the importance of ruling out of the library everything that is not high-toned, pure in diction, and imbued with the proper spirit. Newspapers that indulge in vituperation and abuse are not fit to be in any decent farmer's home. Farmers complain sometimes that their boys on the sly read dime novels, blood and thunder stories, and occasionally we hear of a farm boy who wants to start off to kill Indians and do other marvelous things. He usually finds to his surprise and sorrow that this is a pretty rough world when a boy starts out in a course of wrong-doing. The remedy for this is to give the boy pure literature, such as the best youths' papers and the best novels. We are aware that some farmers think novel reading a serious vice. We do not think so. We do not believe that any boy can read Scott's "Ivanhoe," "Old Mortality," or in fact any of Scott's or Dickens' works, without being benefited thereby. Nevertheless, the more solid reading that the boy does, the better will it be for him in the future. The taste for first-class literature, a relish for the best style, purest diction, and the most terse and incisive mode of expression is an inheritance and acquirement that is worth more than money to him in all after life. It can be easily acquired, provided this kind of literature is placed within easy reach of the boys and girls. Fortunately, the world is full of this class of literature, and a few dollars invested each year in this kind of reading is one of the best investments that can be made on the farm. We know of no farm investment so cheap for the money as the reports of the experiment stations. All that is needed to secure them is a one-cent card, directed to the director of the experiment station of his State, which will secure him the reports of the stations as

they appear. The farmer can discuss these as they appear, with his sons, and especially those bearing on his own farm operations of the experiments reported, and then carefully file them away, and at the end of every three or four years, have them bound neatly and placed in the library together with the files of his favorite agricultural paper. In the same way he should bind up such papers as the *Youth's Companion*, and others of like shape, and at the end of a few years he can build up a library at a very small expense that will be a constant pleasure and profit to his family as the years roll on.—*Live-Stock Indicator*.

#### The Advantages of Knowledge in Agriculture.

Who can overestimate the benefits which knowledge brings to the agriculturist? or who can even adequately estimate these advantages? It was said long ago, in a different connection, that "the people perish for lack of knowledge," but the statement is equally true when applied to agriculture as when applied in the relation in which the words were originally spoken.

The State Dairymen's Association met at Owatonna, in the State of Minnesota, about the middle of last December. One of the prominent speakers at that wonderfully successful meeting was ex-Governor Hoard, of Wisconsin. He gave the name of one patron who supplied milk to one of his creameries during 1893. It came from a herd of nineteen cows. The average paid that year to the said patron for the new milk furnished per cow was \$65. The skim-milk returned to the patron he refused to sell at \$15 per cow. He therefore got for his milk what was at least equal to \$80 from each cow. It was a pure-bred herd, and the sale of the calves still further added to the revenue. The cost of production was \$40. The net profit, therefore, was \$40 per cow. He then gave the name of another patron who had brought milk to the same creamery the same season, and who received \$37 per cow as the total value of new and skim-milk. The cost of production in this instance was \$33 per cow. The net profit, therefore, was \$4, whereas in the first case it was \$40. Bear in mind that the two men dwelt in the same county. Their farms were equally fertile, and yet one man obtained \$36 more of a profit on the milk product of each cow than the other. Now, what caused the difference? Why, in the first case the owner of the cows possessed knowledge superior to the owner of the cows in the second case.

Again, we find many farmers laying out large sums of money annually for artificial fertilizers, who could get a considerable proportion of the same from the atmosphere. They do not know that certain crops, as clover, peas, and beans, can be made to bring certain elements of plant food from the air, which, without them, would have to be bought in one form or another. There is certainly a great difference in the cost of obtaining nitrogen through the medium of the clover plant, as compared with purchasing it in the form of nitrate of soda, or sulphate of ammonia. Not that we wish for a moment to discourage the use of these in their proper place, but it is our part to advise farmers as to what will be to their interest when we see it to be so.

We have in mind two men who, in a certain neighborhood, planted each five acres of potatoes. The season proved a dry one, and unfavorable to heavy yields. One man dug 500 bushels as his crop, and the other man never dug his crop at all, because it was not worth digging. Their farms lay side by side, but the one man grew his crop on intelligent principles, and the other one did not, because he lacked the necessary knowledge.

And so it is through every feature of farm work. Some men succeed where others fail. The latter attribute failure to luck, or season, or to some such cause. The true cause is seldom perceived, because we are prone to look away from self. The eyes were made to look outward rather than inward.

Where shall knowledge on the great subject of agriculture be obtained? From many sources. It may come through the medium of observation. It may be obtained from farmers' institutes, from the agricultural papers, and from books. And it may be obtained from agricultural colleges. Opportunities for gaining knowledge are around us everywhere. But these will not avail unless we are on the alert to profit by them. Those who do will reap the advantages, and those who do not cannot secure them. Those who are wise, therefore, will seek knowledge, and they will seek it diligently, and when they have found it they will try to turn it to the best account.—*Canadian Farm Journal*.

#### The Dollar not Quite Almighty.

"Not practical;" "learning such things won't help a boy to earn his bread and butter;" "you can't make money by reading books,"—these, and remarks of similar import show that, in many minds, there is a distrust of the value of a study that does not give a student increased ability to earn the "almighty dollar," says G. F. M. in *Aggie Life*, the Massachusetts Agricultural College publication. A commercial value is thus put upon the various branches of study. Mind training is brought down to the level of muscle training, that process by which skill in practicing a trade is acquired. The student becomes a four years' apprentice to masters more or less skillful, while development of mind, growth in character, cultivation in the imagination, the tastes, the affections are wholly ignored.

Since education, has a value other than one purely commercial, and since experience has shown that the cultivation of a taste for reading and acquaintance with good literature are educators in themselves, it is not plain that these should be sought at an agricultural college?



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

**GENERAL LOCAL NOTES.**

Secretary Graham spent a few hours in Topeka on Friday last.

The Board of Regents will meet on Wednesday, April 3rd, at 3 o'clock.

Several new students are here for the Spring Term, which begins Monday.

C. M. Buck drops out of Third-year classes to help his father on the farm. He plans to graduate next year.

John Pipher visited College yesterday to circulate a subscription paper for an unfortunate in the Keeley Institute.

Mr. W. S. King of Ogama, Arkansas, father of C. P. King of the First-year class, was a visitor on Friday last.

Prof. Georgeson spent a part of last week inspecting his prospective fruit farm in Southeastern Missouri.

The Loan Commissioner has just succeeded in investing \$20,000 in bonds, much to the satisfaction of all concerned.

Examinations on Thursday and Friday weeded out some weak students, who will perforce abide by the rule, "Drop back or drop out."

Hortensia Harman, C. A. Johnson, and John Patten are elected by their fellow students as editors of the INDUSTRIALIST for the Spring Term.

One of the farm horses belonging to the Experiment Station recently stepped on a nail and so injured his foot that he had to be killed.

The Alpha Beta and Webster Societies are joint owners in a piano, just purchased, which adds much to the interest of the sessions—when well played.

The Horticultural Department has undertaken the task of grading and seeding around Science Hall, and building a walk to connect the east entrance with the drive.

A temperature varying from 90° to 95° on Thursday and Friday didn't need the additional heat of examinations to excite the profuse perspiration noticed in many cases.

Secretary Graham has just mailed a large number of letters to county and city school superintendents in regard to the list of accredited schools whose diplomas admit to the College without examination.

Drill at eight o'clock during the Spring Term will be an innovation and an agreeable change for the young men who suffer discomfort in the tightly buttoned uniform blouse during the heated season.

The old College mail sack which was received from Uncle Sam in April, 1835, is still in the ring, though badly disfigured by its ten years of service in carrying a mail much larger than that of many "cities" in the State.

Among the provisions of the College legislative bill is the important item of telephones for connecting the various buildings. Their use will result in an immense saving of time to all concerned, and it is to be hoped they may be put in soon.

The brief "vacation" between terms from Friday to Monday was taken advantage of by several students who live in the immediate neighborhood to visit home, some of them extending their visit to Monday by consent of the Faculty.

Any reader of the INDUSTRIALIST can obtain a "spray calendar," giving full and up to date directions for preparing and applying the most approved insecticides and fungicides, by sending a two-cent stamp, and mentioning this paper, to the *Kansas Farmer*, Topeka, Kansas.

The Manhattan Horticultural Society, which has held its monthly meetings at the College for many years, and of which Assistant Sears is President, has just issued a neatly printed program for the year. The meetings will be held at the homes of the various members and at the College, and a store of good things is promised those who attend.

While the College has long enjoyed a more than national reputation, it yet remains true that it is not thoroughly known to all the people in our own State. It is also true that it is credited in the minds of many with responsibilities which it never had. Almost daily the mail brings requests for garden and other seeds which are only distributed by the National Department of Agriculture; or for information concerning chinch bugs which should be addressed to the Chinch Bug Experimental Station at Lawrence; or for copies of bulletins on "Alfalfa" and "Wheat" lately issued by the State Board of

Agriculture; or for young forest trees which are only to be had of the State Forestry Commissioner at Ogallah. There's nothing like popularity, though it may be inconvenient at times.

Dr. Devoe of the United States Department of Agriculture stopped at the College on Monday last on his way to investigate the outbreak of disease among various herds of cattle in Geary and Morris counties.

The Class of '95 will publish a book—a class book, with page portraits of each of the sixty members, portraits of the Faculty, engravings of the buildings and grounds, College and Class history, etc. The book will be a work of about 150 pages on heavy enameled paper, bound in limp morocco, and will be an entertaining volume artistically "done up."

On Tuesday last the Post-graduate girls gave a little reception to the Seniors and Senioritas in Mrs. Kedzie's office. Light refreshments in the form of cakes, cut to the shape of butterflies, and chocolate were served. Butterflies and nectar are pretty rich living in these hard times, but nothing "phazes" a Fourth-year, and the goodies were engulfed in a manner that would give pointers to the average amoeba.

We regret that Ed. Secrest's term as regent of the Kansas State Agricultural College has expired and that his successor has been appointed. What a pity it is that all our educational institutions from the lowest to the highest cannot be kept entirely free from political influence. Let us be thankful, however, that our common schools are so nearly free from such influence, and let all friends of education stand firm in keeping them free from it.—*Riley County Educator*.

**The Second-year Party.**

That Second-year boys and girls have some special influence with the clerk of the weather was plainly shown Friday evening, when an exceedingly dusty and unpleasant March wind subsided, and an evening, quiet and beautiful enough for a fairy revel, succeeded it.

As suspicious-looking characters made their way along the College walks and drives toward the home of Professor and Mrs. Georgeson, in thought pleasantly anticipating the entertainment which awaited them, the uninformed spectator might well have imagined that spirits from both the lower and upper regions were walking the earth, instead of harmless and happy Second-years on their way to the "Ag. party."

Dressing-room doors opened to receive the muffled forms, closed, and then opened again to pour forth figures gorgeous in color, and beautiful or grotesque in costume, according to the fancy of the wearer.

Soon the parlors were filled with happy young people, representing almost every nationality under the sun, and whether masked or unmasked, all entered into the enjoyment of the occasion. Professor and Mrs. Georgeson made even the Chinese and Japanese present feel at peace with each other, while Spain viewed the stars and stripes of Columbia without the least resentment, and Turk, Indian, French, Irish, and German mingled together through the parlors in a harmonious spirit pleasant to behold. Several beautiful sunflower costumes testified to their wearers' admiration for the Kansas emblem, while flower-girls, sea-nymphs, Red Riding-hoods, night, day, and many other representations might be seen within the parlors or strolling upon the verandas, which were lighted by Japanese lanterns.

After some time spent in conversation and a general attempt to recognize each other's voices, resulting in many comical blunders, the gentlemen were requested to find partners for supper. When all were ready, at a word from their host the masks were removed, resulting in great merriment and many surprises as to identity. Mrs. Georgeson was assisted by Mrs. Kedzie and the post-graduate girls in serving the dainty lunch which followed, and the enjoyment by Turk, Chinese, Indian, German, and all the rest showed how wide spread was the appreciation of American cookery.

Later in the evening, after joining in a number of games, the guests reluctantly said good night, thanking Professor and Mrs. Georgeson for one of the pleasantest evenings in the two years already spent here, and feeling that their Second-year party was one long to be remembered. B. S. K.

**That Cattle Disease.**

Dr. Devoe, Government Inspector in the Bureau of Animal Husbandry at Washington, arrived Monday to examine into the fatal disease of cattle in Geary and Morris counties. After careful inspection, he states that the disease is not contagious pleuro-pneumonia, and recommends the raising of the quarantine.

Dr. Mayo has been criticised for making public the statement that pleuro-pneumonia existed in the State. He did not make any such statement, and is in no wise responsible for the announcement. His reports after investigation were made to the Live Stock Sanitary Commission, and later, after a second inspection, to Governor Morrill. It was during the interview with the Governor that an Associated Press dispatch was received from Chicago making inquiries concerning the reported existence of pleuro-pneumonia in Kansas. The simple facts in the case were then given to the Associated Press correspondent in Topeka.

Dr. Mayo makes the following statement in a late issue of the *Topeka Capital*:—

Dr. Devoe, an expert from the Bureau of Animal Industry, has decisively shown that the disease among cattle in Morris and

Geary counties is not contagious pleuro-pneumonia. The disease, however, is a pneumonia, and appears to be infectious, as it is scattered through a number of herds in the locality.

The dirty corn fodder has been mentioned as the cause, but it is reported that cattle fed on other feed also have the disease. Dirty corn fodder has been fed over Kansas during this and other years, and no lung disease like this has been known among the cattle. Horses running with the cattle showed no signs of the disease.

Dr. Pritchard and myself refused to state that the disease was contagious pleuro-pneumonia, but the fact that the disease was of long course and that cattle had died from its effects, that no other similar infectious disease is known, lung diseases of cattle being very rare in this climate and altitude, seemed sufficient to warrant a thorough investigation by an expert and precautionary measures to protect the cattle industry.

**GRADUATES AND FORMER STUDENTS.**

Miriam Swingle re-enters classes next week after an absence of three months in Florida.

Mr. Emch, instructor in mathematics at the State University, visits Prof. Walters for a few days.

F. H. Avery, '87, has decided to leave the horse ranch for the present, and will engage in mercantile pursuits in Wakefield.

A. B. Kimball, '89, has given up his school near Scandia to devote his time to editing the *Scandia Journal*, which he has just bought.

W. S. Pope, '92, now a student at the State University, has a column "roast" in the *Lawrence Journal* of the oath-bound gang of Ku-Klux which has been attempting to run things in that institution for some time past. It makes mighty interesting reading.

Warren Knaus, '82, who is President of the Kansas Academy of Science, writes that the Legislature has done an excellent thing in separating the Academy from the State Board of Agriculture and giving it a small appropriation. This happy condition of things is largely due to the ability of Representative Knipe.

S. S. Cobb, '89, druggist at Wagoner, Ind. Ter., has completed his new business block, of which a local newspaper speaks as "the finest block in town, and one of the best in the Territory." The structure is of brick, 58x80 feet, two stories high, plate glass front, and cost nearly \$11,000. A. C. Cobb, '88, is the contractor.

A. G. Bittman, Third-year last term, has been officially notified that his recent examination was satisfactory, and he is ordered to report at West Point June 15th. Bittman has always ranked among our brightest students, of the highest moral character, and when he graduates at West Point four years hence and puts on the shoulder straps he will have well earned them, and will do them honor in the years to come.

In a recent County Teachers' Meeting at Randolph, the College was unusually well represented. The following paragraph taken from A. D. Rice's report in the *Nationalist* gives an idea of how our graduates "show up" on such occasions: "W. E. Smith '93' read 'Methods in History and its Relation to other Studies.' The paper was one of the most practical that has been presented during the year. A single sentence can give no idea of its scope, but the interest taken in it by the teachers showed that history is becoming a live instead of a dead study; and Mr. Smith's methods are of the best."

**COLLEGE ORGANIZATIONS.**

March 23rd.

The last meeting of the Hamilton Society for the winter term was characterized by a shortened program and a lengthened business session. However, that part of the program was very interesting, and suggested how much the Society missed in not hearing the rest. The Recorder was presented by R. S. Kellogg. It contained a brilliant editorial as well as many contributions of marked excellence. Then came a vocal duet by G. H. Dial and W. A. Nelson. The gentlemen sung well, and were forced to respond to an encore. It was A. P. Carnahan's business to "Impersonate," and with the assistance of John Holland at the piano, he did it beyond power to describe. The Society passed from entertainment to business, and examined the cases of several gentlemen whose lists of unexcused absences were too long. It resulted in quite a harvest for the Hamilton treasurer. H.

March 22nd.

The Alpha Beta Society was called to order by Pres. Norton, and the program for the afternoon opened with congregational singing. R. W. Clothier led in devotion. Misses Adelaide and Josephine Wilder entertained the Society with a vocal duet with piano accompaniment. An oration, entitled "To be or not to be," was well delivered by Miss Clayton. Six of the Alpha Beta girls amused the Society for a short time impersonating a sewing society in the back woods. A declamation was delivered by Miss Mannen. The piano solo by Miss Olive Wilson was enjoyed by all. A hearty encore was given, to which Miss Wilson responded. The discussion was given in the form of a dialogue by R. W. Clothier and Nora Fryhofer on the subject of "Women Suffrage." A very interesting edition of the *Gleaner* was presented by R. W. Rader. After recess, a mandolin and guitar duet was given by E. A. Powell and Nora Fryhofer. After an interesting business session the program closed with a piano duet by T. L. Jones and G. W. Fryhofer. N. F.

March 23rd.

The Webster Society was called to order at the usual time by Pres. Morse. J. C. Wilkin led in prayer. "Resolved, that commerce has done more for the advancement of our civilization than manufactures," was the question argued by F. R. Jolly and J. C. Wilkin affirmatively, and B. R. Hull and J. E. Trembly,



negatively. The affirmative showed the effect that the interchange of commerce had upon China and Japan. By the negative basing the intellectual advancement upon the invention of the printing press, the affirmative turned the point as, "The result of the printing press is only an intellectual commerce." As the negative showed what commerce would have been without manufacture, the affirmative showed the value of good if there were no commerce, "Commerce is the circulating fluid which tends to ramify all parts of the globe, and tends to purify and equalize it," but the negative held that, "The purifying factor of this circulating fluid were the burdens (results of manufacturing) that they carried." The decision was given to the negative. F. J. Klaus furnished the Society with violin music. D. T. Davies had an excellent edition of the Reporter. He labored under the motto, "Do unto the Faculty as you would the Faculty do unto you." As "One good turn deserves another," Miss Wilson was requested, as appreciation of the ladies' visit, to favor us with an instrumental selection; we were favored. Geo. McDowell read a selection "The Vision of Summer." W. H. Tunison declaimed "Custer's Last Charge" with its due interest. F. C. Roll read an essay on "Corn Culture." Mr. Sheetz recited a humorous selection, "The Lone Bachelor." F. J. Klaus closed the program with a violin solo. E. G. G.

### The Cities Overcrowded.

There are times of discontent. Is this discontent due to a diseased body politic, is it the tendency of the times, or is it a sort of a world movement? A few facts may suggest some thoughts: Out of every 100 increase in our population during the last ten years, only an average of fourteen have made their homes in the country. The other eighty-six chose to live in villages or cities. This city movement, as we shall call it, is not confined to our country alone. It is a world movement. Japan has had a similar experience. Thirty-four years ago there were as many Germans in New York City as in Berlin. To-day Berlin claims a population of over one and a half millions, and is increasing at the rate of over fifty thousand a year. London is growing at the rate of over seventy-five thousand a year. One out of every seven of England's population is a resident of London alone, saying nothing about the innumerable cities and villages of the country.

Chicago within the memory of the oldest inhabitant has grown from a village to a city of over two millions.

If our young men and young women knew the fate in store for them in great cities they would not leave the farm. The farmer alone is practically independent. He may have hard times, and may be compelled to sell his products at low figures, but he never has to go hungry, nor suffer from cold. Countless thousands in our great cities endure almost to the death, pangs of hunger, and many are seldom warm in mid-winter. Civilization will be advanced, misery and want of every description will be lessened, if more of the boys and girls will remain on the farm.—*Farm and Fireside*.

### Bees on the Farm.

We do not see how any man can get along comfortably on the farm without a few hives of bees. They sting, of course. So do people when badly treated. They fight for their own, and we respect them for it. They would be craven if they did not. While suspicious little rascals, they are susceptible of friendship, and if not, can be easily mastered. A little smoke will settle them; gentleness without smoke. Why keep bees on a farm? First, because they insure a supply for the family of pure, unadulterated sweet, distilled in the flowers by the Almighty himself. God makes the honey, and the bees gather it.

Second, they insure the fertilization of fruits, the importance of which we are just now beginning to understand.

Third, they aid in insuring a crop of clover seed, or if seed be not wanted, the reseeded of the land.

Fourth, they furnish an opportunity for a most interesting and fascinating study in natural history and especially to the inquiring mind of youth.

In buying bees get Italians, the purer the better. They will hybridize, or mix, with common black bees soon enough. Get plain, simple boxes, but never without movable combs. Have but one kind of a hive on the place, and every comb should fit every hive. The rest can be learned by study and observation better than we can tell you.—*Wallace's Farm and Dairy*.

### The Cash Value of School Children.

In his recent report on physical training to the Boston school committee, Director Edward M. Hartwell gives some very suggestive figures in relation to the money value of our school pupils. He bases his computation upon a recent English work on vital statistics, by Dr. Farr of London, who worked out with much detail the present value of the future wages of a laboring man, deducting cost of maintenance, etc. The following rough scale is adopted for estimating the comparative value of the output of educational institutions:—

- 1 grammar school graduate equals 1 mill hand.
- 1 high school graduate equals 5 mill hand.
- 1 normal school graduate equals 8 mill hands.
- 1 college graduate equals 12 mill hands.
- 1 professional school graduate equals 14 mill hands.

—*Journal of Education*.

### FARM NOTES FROM VARIOUS SOURCES.

With the true home idea, farm life can be made more attractive; and even with all its drawbacks and disadvantages it is, on the average, the most comfortable, the most enjoyable, and we all know that it is the most healthful.—*Mortimer Whitehead, in Grange Bulletin*.

Some contend that they remain renters all their days from choice, believing it to be better than to own land and pay the taxes upon it; but land does not improve under the management of such men, nor are they often of the class of progressive farmers, and it is seldom that they acquire a competence.—*Farmers' Home*.

Gradually the light is breaking, and our farmer boys are seeing that there are just as great opportunities for advancement in their line as in any other, and that going away to school to study agriculture is as reasonable and profitable as to go away from home to study in order to become a teacher, a lawyer, a doctor, or a minister.—*W. A. Henry*.

Young men on the farm often have a predilection for mechanics, and some of them would probably have succeeded admirably if their studies had been given that direction. It should be encouraged, and, if possible, developed, for there is no place where a man, handy with tools and apt at the knack of doing things, is more useful.

The decision of the National Supreme Court as to oleomargarine is a just and wholesome decision, and all the people, whether producers or consumers, are greatly indebted to the persistence and zeal of Massachusetts and her officials in defense of pure and wholesome foods. The way is now clear for Wisconsin and other States to enact and enforce similar laws.—*Hoard's Dairyman*.

How cheaply a home can be made beautiful, when one has an eye for the beautiful in nature, and a willing hand to materialize the idea of the soul. A friend in New England left home when a lad of sixteen to try his fortune in trade, and he found it, after which he went back to the old home, and made it again his home. The old orchard that he loved when he was a boy is there still.—*American Gardening*.

Perhaps never in the history of this country have the farmers been more solicitous for the proper selection of their seed corn. The subject is discussed at almost every farmers' meeting and in nearly or quite every newspaper devoted to agricultural matters. It is very evident that a well-bred seed corn is to be desired quite as much as a well-bred horse, sheep, cow, or hog, and that those who are most careful in its selection will, as a rule, make the best crops. Deep plowing and shallow cultivation is now very generally recommended and advocated. Even in a droughty season, if not too extreme, a good crop can be made and insured with frequent shallow cultivation. It conserves the moisture beneath the surface, because acting as a mulch.—*Colman's Rural World*.

The intelligent confidence with which a man who thoroughly knows how to do his work is inspired, is a wonderful help mentally, morally, and physically, as he journeys through life. There is no groping in the dark, no doing this or that by guess work, no theory or speculation about it; and he goes about his business with the air and confidence of a master, fully assured that unless the elements over which he has no control, make it impossible, success is sure to crown his efforts and amply reward his labors. This is the kind of work we expect to get from men born and reared on the farm, whose intelligence has been awakened by a thorough drilling in an agricultural college. They are something more than land lubbers.—*Colman's Rural World*.

### What "Horse Power" Means.

The unit of measurement of mechanical power was introduced by James Watt and called a "horse power." How this name originated is well told in the *Madgeburger Zeitung*. One of the first steam engines built by Watt was to furnish the power for the pumps in the brewery at Witbread, England, which up to that time was supplied by horses. The contract called for as much power as furnished by a strong horse, and in order to get as powerful an engine as possible, the brewer ascertained the amount of labor performed by a horse by working an exceptionally strong horse for full eight hours without a stop, urging the animal with a whip until it was exhausted, and thereby succeeded in raising 2,000,000 gallons of water. Considering the height of the reservoir, this labor represents the present unit of a "horse power," that is, the lifting of 168½ pounds to a height of about three feet per second. This result, however, was obtained by exceptional methods, and should not be considered the basis of measurement of mechanical power. Actually the power of the average horse is barely sufficient to lift 65 to 70 pounds three feet high per second.

In this country it takes annually over a thousand million gallons to supply the little rills that trickle down the throats of the drinkers of intoxicating beverages. In return, there flows back over the bars from the pockets of the drinkers little streams of money that join and form great accumulations. In these days, jealousy of wealth prevails. Many schemes are advanced for the distribution of wealth, from confiscation by taxation down to seizure by force. But what would any of them avail in the long run? The problem is not to distribute wealth, but to keep it distributed. At a moderate estimate, five hundred millions of the hard earnings of labor are spent annually for drink. No matter by what means distributed, wealth cannot possibly stay distributed while the big leaks over the bar remain uncorked.—*Farm and Fireside*.

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work, studies, examinations, grades, boarding-places, etc., may be obtained at the office of the President, or by addressing the Secretary.

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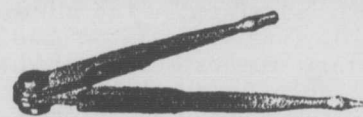
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### DIRECTIONS FOR COLLECTING BOTANICAL SPECIMENS.

BY PROF. A. S. HITCHCOCK.

IN the following notes I have in mind the students in elementary botany who are preparing to collect flowering plants for an herbarium.

#### DRYING PAPER.

There should be two kinds, the dryers and the inner papers. The latter should be of unsized, thin paper, such as cheap newspaper, and be cut to a size,  $11\frac{1}{2} \times 16\frac{1}{2}$  inches. These can be twice as wide and then folded to this size. The dryers should be of thick absorbent paper such as the best quality of carpet paper, and cut to the size  $12 \times 18$  inches. Cheap and effective dryers can be made by using about ten such sheets of newspaper and sewing them together at the four corners.

#### PRESS.

Two boards about the size of the dryers and weights from ten to fifty pounds. Two straps can be used in place of the weights, in which case the press is more portable. Other styles of press may be more convenient, but are no more effective.

#### DRYING THE PLANTS.

Having selected the plants or parts of plants to be put in press, proceed in the following manner: On one of the boards place two dryers, then one of the inner papers. Spread out carefully on this the specimen as you wish it to appear when mounted. Smooth out all crumpled parts. If any part projects beyond the edge of the paper fold it inwards neatly or if it can be spared, cut the projecting part off. The mounting paper is the same size as the inner paper, hence what will not go on the latter would of course be too large for the herbarium sheets. All the trimming and arrangement of parts should be done at this time. Care should be taken not to crowd the plants on the inner sheets. Having arranged the specimens properly, the upper sheet of soft paper is applied, and then two more dryers, another sheet of plants and so on till the plants are all in press. Finally, the second board is put on and held down by weights. The larger the pile the more weights should be applied. For a pile one foot high thirty pounds are usually sufficient.

#### CHANGING THE DRYERS.

In twelve hours the dryers have absorbed nearly all the moisture they will hold and they should be replaced by dry papers. To do this, the upper board is made the bottom of the new pile, two dryers are placed upon this, and the topmost specimen and its two inner papers are transferred to the fresh dryers. The inner papers are not removed or changed, but serve as a protection to the plants until the drying process is finished. The plants should be changed twice a day for two days, and then once a day until dry. Four days is about the average time to complete this process. Succulent plants require longer; small, thin specimens, often not more than two days. When the plants are thoroughly dry, store them away in the inner papers to await mounting. If the plants remain too long without changing, they will mould, and a mouldy plant is valueless.

The dryers should be thoroughly dried after removal from the press. This can be done by spreading them out in the sun.

#### SELECTING SPECIMENS FOR THE HERBARIUM.

Where small enough the whole plant should be procured, care being taken to have the under ground parts in good condition. Specimens should be selected when in flower or fruit, they should also show leaves. This may require two collections at different times, as is the case with the elms.

When the plant is two or three feet high it can often be bent once or twice and thus be pressed whole. With large plants, parts must be selected for pressing. The leaves often vary on different parts, in which case each kind should be represented.

Thick portions, as bulbs or fleshy roots, should be sliced before being placed in press.

The best receptacle for collecting is a tin collecting case or "botanizing can." This shuts tightly to prevent drying out. Tin pails will do, but are likely to injure the plants from the necessary crowding and jlding. Pasteboard boxes are of little value. If used they must be well filled and tightly closed to prevent the wilting of the specimens. Before putting in press all dirt should be removed, and old or disfigured leaves or other parts removed.

#### LABELS.

With each specimen in press should be placed

a temporary label. This label should show the locality (geographical position), habitat (physical condition, e. g., rocky hills, lowland, woods), date, and any fact about the plant which the dried specimen will not show. Among the latter may be mentioned the size and appearance of the plant in case only a portion has been obtained, and the color of the flower. These facts are afterwards transferred to a permanent label and mounted with the plant.

### COST OF PRODUCTION.

BY SUPT. J. S. C. THOMPSON.

FAILURES in business occur in other vocations than farming, but it is safe to say no other business is managed with so little care or forethought, or with so little study of its possibilities as is that of the farmer. Really successful farmers are few considering the large number engaged in agricultural pursuits. The slipshod methods of many farmers, and the total lack of method in the case of others, would bring swift and absolute failure to the modern manufacturing concern, where the most economical methods of manufacture consistent with quality must be studied and the cost of production reduced to an exact science. So thoroughly systematized, for illustration, is the work in a large shoe factory that, though a shoe in its various stages of construction may pass through the hands of twenty workmen, its cost, boxed, crated, and ready for the retailer, is known to the fraction of a cent. In a large packing house there is no uncertainty as to the cost of a pound of meat of any quality, either raw or cooked and canned ready for use, for the reason that everything, even to the offal, is utilized and has a money value known almost if not quite to the cent.

The cost of production must be known before any article can be sold on the business basis of profit, without which it would be impossible to conduct any business, and the spectacle of the farmer growing and marketing his produce without knowing its cost may well excite comment and criticism. The profit on any farm crop depends less upon what it is sold for than upon what it cost. The farmer has no control over the market price of the stuff he has for sale a condition to be deplored, but for which no remedy has yet been offered, but the cost of production is largely under his control, and he can gauge and regulate it if he will.

The conditions upon which the cost of farm crops depend are clearly stated in a recent bulletin from the Nebraska Experiment Station, which may be summarized as follows:—

First, The character of the season. There are several matters which add to, or detract from the cost; as, the amount and distribution of rainfall; the coldness or the heat; the growth of weeds and consequent increase of cost from more frequent or prolonged cultivation. All of these, and still others, affect the cost by creating either a maximum or minimum of labor, and by giving a large or a small yield per acre.

Second, The price of labor and the amount used upon a particular crop affect the cost of the crop. A farmer may in some single year raise a crop very cheaply by using a minimum of labor and allowing the weeds to attain a fine stand, thus seeding the ground well and causing all future cultivation to be more costly.

Third, The previous treatment of the soil. It may have been abused or heavily cropped for several years in succession. The crop that preceded may have had an adverse influence upon the succeeding one. These and other considerations, such as the application of manures or other fertilizers, in other years, affect the cost.

Fourth, The individuality of the farmer. One man may, by his superior judgment in the planning of his labor and in the timely treatment of the soil, accomplish much more than his neighbor who joins farms with him. By the more thorough way the former does his work, his crops are better able to withstand drouths, they ripen a few days earlier and thus escape frost. The latter, though with as many natural advantages, is always a little late; his work is hastily and superficially done, and the result is shown in reduced yields and poorer quality.

A man cannot afford in any line of life to take educational or recreation advantages that he does not give his wife. A man's rise in the world depends largely upon his wife, and it is a narrow-minded policy to leave her at home when it is possible to take her along.—L. B. Pierce.



### A Woman's Idea of a Farmer's Home.

To make a first-class home in this country, one should have good taste, money, irrigation. With these three requisites, a home may be made as pleasant here as elsewhere.

The house should be commodious and comfortable, the lawn green and smoothly shaven, and embellished with plenty of trees and flowers. But as some of our farmers came here to seek rather than to spend their fortunes, perhaps it would be more practical to speak of homes that may be made attractive without a great outlay of money.

On these vast level plains we want an abundance of trees; groves of forest trees around the border for a protection from the north winds of winter and the south winds of summer. In selecting trees for this purpose care should be taken to obtain varieties that are adapted to the climate, or precious time may be lost and orchards injured by the delay of resetting.

Let us have plenty of fruit; not only the standard apple, pear, cherry and plum, which time has demonstrated are a success here, but we may have grapes and small fruits of all kinds. They are seldom winter-killed, and with care may be made to yield large returns for the labor bestowed upon them, and there is no reason why we should not have delicious fresh or canned fruits upon our table throughout the year.

Every farm should have a large vegetable garden, which is not only conducive to health but enjoyment. But do not plant potatoes or sow alfalfa or make an orchard in your front yard. Set apart a few rods of your possessions for ornament and make it as ornamental as the circumstances will allow.

Sow the yard in white clover and blue-grass, and if you can empty your reservoir upon it once a week it will give good satisfaction and grow luxuriantly throughout the summer. Of course, you can water with the hose every day as they do in the city, but you cannot afford the time, and I believe that flooding once a week will give almost as good results.

One of the most important requirements for a beautiful home is neatness. Let all your rows of trees be perfectly straight, your reservoir walls broad and built by a line. Do not keep old farm implements, broken crockery, tin cans, or bits of boards lying all around the house. Attention to these matters will not cost anything, and will add greatly to the beauty of your surroundings.

Whether the house be large or small, let the good wife see that it is kept in order. "Order was heaven's first law," and must be obeyed in the home, if you would have comfort and happiness. The perfect home should contain father, mother, brothers, and sisters bound together by a tie of love so strong that the poet's words may find a lodgment in each heart—"Be it ever so humble there's no place like home." The mother is the central figure around which all revolves. She is the constant companion of her children, and it is pleasant or disagreeable according to her will. If she governs her temper and cultivates an amiable disposition, the family will imbibe like qualities, for I have good authority for saying, "A soft answer turneth away wrath." Above all, and first of all, she should be a Christian. She should have the sustaining grace which the Christian alone receives, to strengthen her in the trials and temptations which continually beset her pathway. The old saying is as true today as it ever was—"A stitch in time saves nine." She should diligently teach her daughters everything pertaining to housekeeping, as that still continues to be the occupation which is allotted to the majority of women. She should so manage her affairs that she can have a few minutes each day for reading, and keep herself informed on the current events of the day, that she may be an intelligent companion for her husband and a reliable book of reference for the questioning children.

Much of the unhappiness of the farm home depends upon the father. He should cheerfully furnish them all the necessities of life, including an abundance of good literature, to take the place of the amusements which the children of the town enjoy; he should assist them in their studies and amusements and should maintain an unselfish devotion to the general interests of the little kingdom of which he is the acknowledged head and ruler. Let him impress upon the mind of his son a love for the farm; the important position the farmer fills in the world, his independence when compared with those of other occupations. Tell him that ten of the presidents of the United States were called from farms, and this list does not include the famous rail-splitter and other farmers' sons who attained to that position. Tell him that it is a well-known fact that the great majority of prominent positions, in religion, in politics, in great business enterprises, have been filled by farmers' sons. They are not constantly exposed to the temptations which beset the village or city boy, are not allured from study by worthless or vicious amusements, and by the time they are old enough to start out for themselves they have lost the taste for such things.

There is no one who has a better opportunity to continue his education and improve his mind and keep pace with all the questions of the day than the farmer. With his brain rested, his physical frame and digestive organs strengthened and invigorated by the exercise and fresh air of the day, he is in prime condition to sit down by the evening lamplight and feast his mind on the banquet which literature of the nineteenth century has supplied him.

In this short article I have endeavored to prove that with irrigation, with industry, economy, neatness, good taste, religion, the refinements of education and family love and unity, the farm home may be made a thing of beauty and a joy forever.—Mrs. Anna B. Rich in *Farm, Field and Forum*.

### Beauties of Farm Life.

Young people sometimes complain that the farm is so dull, that there is nothing to entertain them! How can that be true when there are concerts every morning, unsurpassed by human voices, and dozens of solos by these little songsters every day? How they fill the woods with their music! Can anything be more charming than to listen to their varied notes? May we not be entertained as well as instructed by studying the habits of these little friends as well as those of many others?

We may leave the farm to begin our education by going to some college or university, but we find that we must come back to the farm to finish it; for the highest learning consists in being well versed in the laws of nature. It is much easier and more pleasant to study from nature than to pore over books, for every lesson is illustrated, and our surroundings are not four uninteresting walls, but the blue sky overhead for a roof, and the earth beneath, covered with the soft, green grass for a carpet.

In every season of the year there is something that makes one love the farm. In spring, the earth robed in green, the first wild flowers peeping up from among the grasses; later on, the fruit trees laden with pink and white blooms, scenting the air with a delicious perfume. In the first warm days, what a thrill of pleasure one feels as he shoulders a fishing rod and starts for a neighboring brook or pond, calculating as he walks along, about the size and number of fish he will catch if fortune favor him.

When the long hot days of summer come, there are the trees inviting us to sit in their shade and rest ourselves. Now is the time our city cousins find the city dull and come to visit us, glad to exchange its hot, dusty air for the cool, refreshing air of the country. The farmer's table is well supplied with fresh vegetables of all kinds, too, for at this time of the year the garden is in full blast. The tall, green corn is so pretty, and the yellow wheat fields, waiting for the harvester, look like a golden sea moving in the gentle breeze. But autumn on the farm is the best season, for it is the fruit gathering time of the summer's work. The apples must be gathered and stored away for winter, and we may help the squirrels gather the hickory-nuts and walnuts.

Such pleasant thoughts come to us as we wander through the woods that are turning all yellow and red in the autumn sun and frosts. The trees shedding their beautiful leaves, leaving the branches bare and brown, only they burst into new life again the next spring, made one think of a person past middle age who is losing the freshness and beauty of this life only to become more beautiful in the next. As the short days and long nights of winter come, it, too, brings with it its pleasures. How bright and cheery the fire looks when coming in after making all the stock outside comfortable. When the evening meal is over and we gather around the fire to talk and read and refresh ourselves with nuts and apples, although it may be cold and blustery outside, yet our hearts feel a glow of warmth which the storms cannot affect. In after life, as we review our youth, we will place the memories of these long evenings spent by the farm fireside among our most pleasant recollections.—Laura E. Shannon, in *Rural New Yorker*.

### Agricultural Colleges: Do They Aid Farmers?

While this question would be answered in the negative by many of the farmers of this country, and while it might be popular, in a measure, for a man to hold this opinion, yet we are pleased to note that the class of farmers who think Agricultural Colleges and Experiment Stations are of no benefit to them are daily growing smaller. True, many of such institutions have almost failed to promulgate anything of value to us as practical men and women of the farm, yet, with a majority of all kindred institutions throughout the United States, we find they have gathered much valuable data from their experiments, and the reason farmers have not benefited by these investigations is not alone from the fact of their not knowing how to secure such information, but largely from a lack of confidence in the work of the Stations.

We have occasionally met a farmer whose ideas on the work of colleges and experimental stations remind us of the Bible narrative of Christ: "Can any good come out of Nazareth?"

But laying aside all that has been said, there is no doubt but our agricultural colleges have been at fault, many times they have failed to do as much as they should in behalf of the farmers. We attribute this largely to the seeming short-sightedness of those men who have been delegated to choose the workers at such institutions. When professors have been selected who are totally ignorant of farming interests, it is not to be anticipated they will do much for the farmer except in a very superficial manner.

From a somewhat general knowledge of the qualifications of the men who, for the most part, manage our stations today, we are led to believe that greater care is being exercised in the selection of these men, and that only such men as can substantiate theory and scientific principles by practical experience and known fact. As farmers, it is only just and right that we should demand that this idea should rule future proceedings more fully than it ever has in the past. We shall note briefly two points which are suggested as a possible help in making our colleges and stations more useful to farmers:—

First—Farmers must interest themselves in the work done. They must visit such institutions, study their methods, results, conclusions, etc. They should commend all work considered worthy, criticising in a kindly spirit, work which would appear of little or

no consequence. They should follow up such criticisms with suggestions for future work. In this way many points of universal importance would be brought out. One thing above all others, as a farmer, never find fault until you know all about the work you are about to criticise. Do not say there has never been anything useful or practical accomplished just because you have heard some one else say so.

Second—The Station staff should acquaint themselves with the conditions and needs of the farmers and farms of their respective States. Let them consult farmers as to what experiments they would like to see carried out. Large sums of money are being expended every year for purposes of experimentation, and it is not difficult to understand that friendly and intimate relations should exist at all times between the farmers and their State institutions, whose fundamental organization was intended to benefit the farming class.

The writer believes he but voices the sentiment of the rural class of Michigan when he says that there doubtless never was a time in its history when the farmers were more interested in the work of the Agricultural College than today, and from a personal acquaintance with the staff of the College, we can assure those who are not of the sincere desire and determination of these gentlemen to serve the farmers of the State in every way they may be able.—Herbert W. Mumford, in the *Farmers' Magazine*.

### A Successful Career.

Every parent wishes for his boy a successful career in life, and wishes that his daughter when she marries may be wise enough to give her heart to a worthy man who has in him the elements necessary to a successful career. It matters little what may be the profession adopted, the conditions of success are much the same in each. The man who succeeds on the farm would in all probability succeed in the factory, in merchandise, or in any one of the professions. Geo. W. Childs, of Philadelphia, is one of the men who have made a great success in life. He is not merely an editor of one of the great papers, but a philanthropist as well, devoting annually large sums in various ways to the betterment of the conditions of his fellow men. He began his career as an office boy at three dollars per week, and now counts his income by many thousands of dollars per year. The following statement of the means by which he obtained his success should be read by every boy:—

"One should first accustom himself to not be afraid or ashamed of any kind of work that is honest and useful. But one may be industrious, and yet his industry may not achieve much valuable result. You should work intelligently—be preparing the way for what you intend to become while doing that which lies close to your hand. While I, for instance, was working as errand boy, I improved such opportunity as I had to read books, and to attend book sales so as to learn the market value of books and anything else that might be useful to me hereafter, for I always aimed to be one day in a position where I could use my best talents to the best advantage. I fixed my ambition high, so that, even if I did not realize the highest, I might, at least, be tending upwards. If you jump at a thing with your whole heart and mind, though you may not be exceptionally able, it is wonderful how much you may accomplish. But if you are half-hearted you will fail."

While Mr. Childs has succeeded in one line, other men by the same means have succeeded in different lines. Andrew Carnegie, of whom we have heard so much in the last year, began his career in America as a boy in a telegraph office. In fact, nearly all men who have won great success in life have begun low down, and all of them have succeeded by honest means, have been great workers, and have done their work intelligently. No amount of muscle alone can achieve success in this day and age of the world. The effort must be intelligently directed. The brain and hand must work together, and must work in full conviction that the reward is sure. To doubt is to fail. The half-hearted will always fail. The man or boy who spends his time complaining that the fates are against him—that the world is down on him—will fail, as a matter of course. There is not a farm boy who reads these lines and is willing to pay the price of success that cannot achieve success to a greater or less extent.

Some men are capable of higher degrees of success than others, because more highly gifted by nature. Others have better opportunities, but there is no need of anyone, no matter how poor, provided only he has health, failing to achieve a success that should satisfy a reasonable ambition. By all means farm boys should get rid of the notion that the boy whose fortune it was to be born in the city and educated in the city school, with all the advantages usually supposed to belong to cities, has a better chance in life than the boy who is raised on the farm, and whose first beginnings of education were made in the country schools. The men who forty years in the future will conduct the business in Kansas City, St. Louis, Omaha, and Chicago, are now going to country schools. It is so in every city in the United States, and is likely to continue to be so as long as there are farms and cities. Let no boy regret that he was born a farmer's son and spent the first twenty years of his life on the farm. He could not have been born and raised in a better place.—Live-Stock Indicator.

Strawberries are best of all berries. Every man that owns a piece of land should have a patch of strawberries. If your children cry for them you will give them salt pork. Strawberries should be set May. Ground bone and wood ashes make the best fertilizers.—Prof. Munson.



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

**GENERAL LOCAL NOTES.**

Judge Green visited College Thursday morning.

John Patten spent Saturday and Sunday at Silver Lake with home folks.

Minnie Copeland, Second-year last year, returns to College for Spring term work.

Hortensia Harman has recovered from several days illness and is again in classes.

R. S. Kellogg drops out of classes for the spring term. He plans to graduate in '96.

Mrs. McKeen, Lottie Smith and Hilda Walters were among the numerous visitors Friday afternoon.

Herman Dalke, of Manaske, Wisconsin, and Carl Engel, of Manhattan, visited College Wednesday.

Judge D. C. Chipman, of Minneapolis, Kas., paid a visit to his son in First-year classes last Monday.

Mrs. Viall of Spring Valley, Minnesota, attended chapel exercises Friday with her niece, Flossie Fox.

Judge Doster spent a short time at the College Thursday, in company of Mr. Bower of Manhattan.

Sadie Stingley, Hannah Wetzig, Bessie Morrison, and R. K. Farrar are valuable acquisitions to the Third-year class this term.

Ida Pape, of Topeka, is visiting her brother, C. W. Pape, Fourth-year. She expects to complete the course here with the class of '96.

The Horticultural Department has thirty-one special students this term—several more than ever before. This speaks well for the management.

Mariam Jones, Julia Williams, Geo. Wheeler, J. J. Johnson, B. F. S. Royer, and Ed Haise were in different stages of the mumps on examination days. Miss Williams expects to return home.

Dr. Mayo was called to Winfield this week to inspect a diseased herd of cattle. Poison in the form of nitrate of potash in corn fodder was found to be the cause of the trouble, which resulted in the death of ten animals.

Gov. McKinley, of Ohio, will surely be at Ottawa Chautauqua Assembly on Grand Army Day, June 20th. No one had more sincere regrets than he that it was impossible to be there last year, and his positive assurance is that he will come.

Farmers' Bulletin No. 27 on flax culture, just issued; will be sent to any farmers who may wish to try flax or seed and fiber, if they will furnish addresses to Chas. Richards Dodge, Special Agent, U. S. Department of Agriculture, Washington, D. C.

The corps of College Cadets, including the Cadet Band, numbers this term 155 men. New interest has been added to the Military Department by the prospect of new uniforms, with a probability of a system of individual lockers for the clothing and equipments of each man.

Mr. Dewey, the photographer, made a negative of the ruins of the President's house this morning. He will do some work at the College next week in photographing the experimental steers. He is busily engaged, also, on his portraits of the Fourth-year class, most of which will be finished next week.

The Fourth Division of the Fourth-year class delivered orations in chapel Friday afternoon, as follows: "The Influence of Hypnotism," J. B. Harman; "Pearls and Straw," Laura McKeen; "A Journey," C. A. Johnson; "Through Difficulty We Triumph," W. I. Joss; "American Humor," Ada Rice; "War Taught Will Soon be a Battle Fought," M. A. Limbocker; "The Failures of Infidelity," S. A. McDowell; "The Value of Character," T. W. Morse.

The Regents and Faculty met at tea in the Sewing Room, Wednesday evening, with additions to the company in the persons of Mrs. Hoffman and Mrs. Daughters. After justice had been done to the good things provided by the Cooking Class, speeches were called for and entertaining responses came from Regent Secrest, the retiring Treasurer, Regent Hoffman, Treasurer-elect, President Street, Regents Kelley, Goodyear, Noe, and Daughters, Mrs. Kedzie, and Mrs. Hoffman.

**GRADUATES AND FORMER STUDENTS.**

Jennie Selby is visiting with relatives in Lexington, Nebraska.

John Thackrey, '93, pastor of the M. E. Church at Crawford, Neb., was present at the marriage of his brother on Wednesday, and visited College friends during the week. He occupied the pulpit at the Methodist Church, Sunday evening, to the gratifica-

tion of his hearers, especially those of his classmates who were present.

Birdie Secrest, '92, visited her Alma Mater Thursday morning.

Stella Kimball, '94, takes Zoölogy and Domestic Economy as Post-graduate studies this term.

Maud Gardiner, '93, takes up Post-graduate work this term in Cooking, Sewing, and Chemistry.

A daughter was born, March 31st, to Sam Van Blarcom, '91, and Caroline Stingley-Van Blarcom, '91, of Kansas City.

I. Jones, '94, enters upon a post-graduate course this term, taking up horticulture, botany, and economic entomology.

C. I. Limbocker, Second-year in 1879-80, is elected assessor at Perry, O. T., on the Citizens' ticket, running ahead of his ticket.

Frank Ames, '94, was seen about College during the week. He is general agent for a library association, with headquarters in Manhattan.

Nora Baxter-Ingram has the earnest sympathy of many old College friends in her sad bereavement occasioned by the death of her mother on April 1st.

Albert Thoes, Second-year in 1886-7, comes to Manhattan for the purpose of purchasing property. He desires to locate here and give his children the benefit of our schools.

James E. Thackrey, Third-year in 1889-90, was married on Wednesday evening to Abbie Rice, First-year student, daughter of Mr. and Mrs. H. H. Rice, of Manhattan. Mr. and Mrs. Thackrey will go next week to their home at Cooper, Neb., where the groom is engaged in a mercantile business.

**The President's House Burned.**

About nine o'clock last night lightning struck President Fairchild's house, and in less than half an hour it was completely destroyed, with nearly all its contents. Part of the library, a case of silverware and china, several wall portraits, and a few articles of minor importance were carried out. The library is insured for \$900, and the household goods for \$600. There was no insurance on the building. Clare Wilson and her brother Alexander, both students, living with the President's family, lost all their personal effects except the former's trunk.

The lightning struck the iron ventilator pipe at the northwest corner of the house. For some minutes the occupants, while they smelled smoke, could not locate the fire until the President reached the attic, to find it even then a furnace. Sending Mrs. Fairchild and Miss Wilson to Prof. Georgeson's house, the President gave the alarm to the Webster Society in session in Science Hall, and the boys, with Janitor McCreary, coming promptly to the rescue, attached the College fire hose to the hydrant near Mechanics' Hall and unrolled only to find the hose fully a hundred feet too short. They then gave their attention to the house, succeeding in saving the articles named above, but the flames, fanned by the strong north wind, spread so rapidly that it soon became dangerous to enter the house, and in less than twenty minutes the roof had fallen in, and the work of destruction was practically complete. The city fire company arrived after a long, hard run of a mile and a half through the mud, and rendered efficient service in preventing the flying of embers which might have endangered the main building.

Though the household goods were partially covered by insurance, the loss will be considerable, while the loss of the many family "keepsakes" cannot be estimated in dollars and cents. Beyond the articles enumerated and the clothes they wore, none of the personal effects of Pres. and Mrs. Fairchild were saved.

The building was erected in 1885, at a cost of \$4000, and was originally intended for the Professor of Horticulture. It was a plain, substantial structure, and a most comfortable home, and its loss will be keenly felt. It cannot be rebuilt until appropriation is made by the Legislature two years hence, or possibly an emergency appropriation may be made during the special session next winter.

President Fairchild will occupy rooms for the present with Dr. Perry, in town. Miss Wilson will live with Prof. Hood's family, and her brother is taken in by F. J. Smith, of the Fourth-year Class.

A good work was begun this morning by the boys in the Printing Office in donating their day's earnings toward the relief of their unfortunate fellow students, and others have planned to help. The student body will be given an opportunity to aid, and sympathy in a substantial form will not be lacking.

This fire emphasizes the necessity of adequate fire protection on the College grounds, since it is contrary to the policy of the State to carry insurance. With proper provision for fighting fire, and a janitor resident upon the grounds, last night's disaster might have been averted.

**Library Notes.**

The Class in Political Economy is at present very much interested in a list of topics for theses which the Professor has hung in the Library for the use of the Class. Almost every hour of the day finds some anxious Senior poring over the list, or searching the Library for data on the chosen subject.

Thirty-two volumes on economic subjects have lately been added to the Library, much to the gratification of all students interested in this line of work. The Library office is greatly indebted to Mr. Bax-

ter for some beautiful plants from the greenhouse, the Easter lilies, callas, and bright geraniums especially attracting attention, and improving the appearance of the office generally.

M. F. Hulett, '93, has kindly remembered the College Library in a generous manner by the donation of several hundred copies of valuable farm journals, such as *Country Gentleman*, *Kansas Farmer*, and many others. These will probably help materially in completing files of some magazines now unbound, and to make up sets for the shelves.

Prof. Will has donated to the Library valuable pamphlets on subjects economic, among them Henry George on Protection and Free Trade.

The Library has lately received from the Massachusetts Society for Promoting Agriculture a treatise on the infectiousness of milk, a valuable work for veterinarians.

The Annual Literary Index to Periodical Literature for 1894 has been received and placed on the shelf. This, with the supplementary index to current magazines kept in the office, is daily consulted by students and Professors.

J. R. P.

**Board Meeting.**

The Board of Regents met Wednesday afternoon, with all members present, and President Street in the chair.

The new members, Mr. Daughters of Lincoln county and Mr. Noe of Butler county, took the oath of office.

The election of officers for the ensuing year resulted in the choice of Regent Street for President; Regent Kelley, Vice-President; Regent Hoffman, Treasurer; President Fairchild, Secretary; Regent Goodyear, Loan Commissioner.

President Street appointed the following standing committees:

*Finance*—Regents Daughters, Kelley, and Goodyear.

*Farm Management*—Regents Kelley, Noe, and Hoffman.

*Horticulture*—Regents Goodyear, Daughters, and Street.

*Grounds and Buildings*—Regents Hoffman and Noe, and President Fairchild.

*Employees*—President Fairchild, and Regents Hoffman and Kelley.

A resolution was adopted authorizing the President of the College to attend the regular meetings of the State Board of Irrigation, and present to the Legislature a bill for expenses of such attendance.

The Board met Wednesday evening with the Faculty at a supper prepared by the Cooking Class under the direction of Mrs. Kedzie; and in the joint meeting which followed the heads of departments made their usual reports.

Pres. Fairchild and Capt. Cavanaugh were appointed a committee to purchase the 200 Cadet uniforms provided by legislative appropriation, such uniform to consist of blue blouse and cap and grey trousers.

The Committee on Grounds and Buildings was authorized to expend the appropriation for extending steam heat to the Armory. The construction of the sewers was authorized, anticipating the appropriation, so far as labor is concerned.

A resolution by Regent Hoffman was adopted favoring the employment of students in tasks suited to their abilities in preference to other persons.

The Committee on Grounds and Buildings, with the heads of departments interested, was authorized to construct cases, etc., in Science Hall under legislative appropriation for that purpose; to expend appropriation for furniture in Library, and for repairs and improvements. The appropriations for Library will be expended under direction of the Faculty, and the appropriation for apparatus, implements, etc., under direction of the President and the heads of departments. The estimates of the Station Council were approved.

President Fairchild was given authority to procure a new engraving of a general view of the College.

An edition of 7,000 catalogues was authorized.

The President was authorized to ask for bids and award contract for printing bulletins of the Experiment Station.

The Station Council was directed to make the reports of irrigation experiments to the State Board of Irrigation as required by the new law.

President Fairchild and Regents Kelley and Noe were appointed a committee to secure a suitable person to give the Annual Address.

The Station Council was directed to provide a pump for Oberlin Irrigation Station, and arrange at its discretion for cultivation.

Appropriations were made as follows: For supplies in Geology and Zoölogy, \$10; Mechanical Department, for molding sand and gas for lantern, \$13.50; Horticultural Department, for tools, scraper, and repairs, \$40; Executive Department, for matting, \$40.

Authority was given for investment in school bonds of old Oklahoma east of the Rock Island Railway, including districts through which said railway passes, the Loan Commissioner and Secretary to ask such legal opinion as they may agree upon without expense to the College.

A vote of thanks was extended to Mr. Seymour Davis, State Architect, for several sets of building plans for State institutions donated to the Department of Industrial Art and Designing.

The recommendation of the Faculty for arrangement of Geology and Political Economy with an extended course was adopted.

Prof. Mayo was authorized to comply with the requirements of the new law making him advisory vet-



erinarian to the Live Stock Sanitary Commission at the expense of the State for traveling expenses.

President Fairchild was authorized to insure the additional ordinance for five years.

The Treasurer and the Secretary were given authority to arrange for funds to meet the current monthly pay-rolls of the College until the semi-annual collections of interest are made by the State Treasurer.

In recognition of the efficient services of Regents Secrest and Stratford, the Board adopted the following resolutions:—

*Resolved*, That on the departure of Regents Stratford and Secrest from this Board by reason of the expiration of their commission we express to them our hearty appreciation of their conscientious services as Regents and as officers of the Board, and our regret that we shall no longer enjoy the pleasant associations of the past two years.

The following report of the Finance Committee was adopted:—

Your Finance Committee having examined the report and vouchers presented by Treasurer Secrest and diligently compared the same with the books of the Secretary, hereby report the same as correct according to the best of our knowledge, and recommend that it be made the basis of settlement between him and the Treasurer elect.

E. C. GOODYEAR,  
HARRISON KELLEY.

### Popularize Poultry Keeping.

Poultry, in the way which they are often kept on a farm, afford neither pleasure nor profit. Why is this? Because so little attention is given to them, either in breeding or care. As a rule, farm fowls are not as good as they should be. Now, there is no place where finer fowls can be raised than on the farm. Instead of this, however, we find a great many poor ones. No fresh blood is introduced for years; very often they are allowed to roost in the trees, or any place they can find, having no houses of their own. It is not much to be wondered at that so many say that their fowls do not pay. How can such breeding and care be expected to pay? We should not expect to realize very large profits from our other stock, if they were handled in that manner. That there is a profit, as they are now kept, shows that there is good ground to walk on, with a chance for as large profits as can be got from any other department of farm work.

"Which variety shall we keep?" is a question often asked. That depends on what you keep fowls for—whether for eggs only, for meat, or the two combined. If for eggs, the Leghorns and Minorcas are the best. The eggs of the Leghorn are smaller than those of the Minorca, but the birds likewise are smaller and require less to keep them on, so that the weight of eggs produced for food consumed will be equal to, and, I think, surpass that of the Minorcas. As it is always necessary to kill off the older birds to make way for a certain number of pullets yearly, flesh value must be also taken into account. The Leghorn matures very quickly, and, young or old, are very much superior to the Minorcas for the table.

If a table fowl alone is wanted, the Plymouth Rocks, Dorkings, and Brahmas will be found suitable; the selection of any one variety being based on the question whether fitness for the table at an early age, plumpness from a month old, or large size is wanted. For a general purpose farm fowl the Wyandotte is superior to all others. I have tried many varieties, but have found none to compare with it. In this opinion I am corroborated by the leading authorities of the United States. These fowls are hardy and clean legged, have no feathers to clog with snow; and their combs and wattles are of medium size; they are of a vigorous, lively nature, good layers, and excellent for the table, from two months old to full maturity. They are some of the plumpest birds, at all ages, that are to be found.

There are sitters and non-sitters among fowls. This latter quality is not natural, but has been established by careful breeding for man's convenience: so bear in mind if you cross-breed them—even the non-sitting varieties—that you will get sitters. So, while a bird in its purity may be either a sitter or non-sitter, a cross-bred bird will always have the incubative quality developed.

In the erection of poultry houses a few general rules may be observed. These are warmth, plenty of light, and ventilation. Without these your house, no matter how costly, will not be suited to the wants of its feathered inhabitants. Make no double walls with a space between them' as it forms a harbor for vermin. The best inside wall is well matched boards, which leave no seams for vermin to lodge in. Make all nests, perches, etc., movable, which greatly facilitates cleaning the house out. Use plenty of lime-wash on the walls, coal oil on the perches and in the corners and joints of the nest boxes. To become interested in and familiar with poultry, you should subscribe for one of the many excellent poultry journals; go to a poultry show; get a setting of eggs or a pair of birds of some pure breed from a reliable dealer; care for them as you would your well-bred sheep, cattle, or horses; and if in six months you have not got what fanciers call the "hen fever," you certainly have no love for the beautiful.—John J. Lenton, in Canadian Live Stock and Farm Journal.

### Value of Ball Bearings.

An experiment with ball bearings was recently made in Canada. A street car, fitted with ball bearings, was drawn a distance of several hundred feet by men pulling on three strands of ordinary sewing thread. A carriage manufacturer put another style of ball bearings on the axles of a coach ordinarily pulled by four horses. A trained dog was hitched to the pole and he drew the coach around the yard with little effort. The combination of pneumatic tires and ball bearings would evidently relieve much of the strain now put on horses drawing heavy vehicles.

### The Weather for March, 1895.

BY C. M. BREESE, OBSERVER.

This month breaks the maximum temperature record, being higher by 8° than ever before recorded. In all other respects the meteorological conditions have been about normal. The warm weather of the last week started vegetation vigorously, and it is feared in some cases, prematurely, if we get our usual cold snap in April. At the end of the month tame grass affords pretty fair picking, and with a good soaking rain and continued warm weather the prairie grass would start immediately. The prediction in the February report, that the peach buds were all killed was not well founded. Many fruit buds are left alive, and at the end of the month are swelling and almost ready to burst into bloom. With favorable weather, there is promise of a fair crop. Early sown oats are coming up nicely, and are a good stand. Hard wheat promises about half a crop. Soft wheat is an entire failure.

*Temperature.*—The mean temperature was 41.73°, which is 1.16° above normal. There have been 13 warmer, and 23 colder Marches,—the extremes being 50.89°, in 1860, and 24.58°, in 1867. The highest temperature was 95° on the 28th; the lowest, 5° on the 14th,—a monthly range of 90°. The greatest daily range of the thermometer was 50°, on the 28th; the least, 10° on the 19th. The mean daily range was 29°. The warmest day was the 28th, the mean temperature being 72.75°; the coldest day was the 14th, the mean being 12°. The mean temperature at 7 A. M. was 33.45°; at 2 P. M., 52.87°; at 9 P. M., 40.29°. The mean of the maximum thermometer was 57.48°; of the minimum, 28.64°; the mean of these two being 43.06°.

*Barometer.*—The mean pressure for the month was 28.824 inches, which is .04 inch above normal. The maximum was 29.241 inches at 7 A. M. on the 25th; the minimum, 28.36 inches, at 9 P. M. on the 29th,—a monthly range of .881 inch. The mean at 7 A. M. was 28.851 inches; at 2 P. M., 28.808 inches; at 9 P. M. 28.813 inches.

*Cloudiness.*—The per cent of cloudiness was 32.8, which is 10 per cent below normal. The per cent of cloudiness at 7 A. M., was 35.48; at 2 P. M., 41.93; at 9 P. M., 21. Five days were entirely cloudy, two were five-sixths cloudy; two were two-thirds cloudy, one was one-half cloudy, three were one-third cloudy, four were one-sixth cloudy, and fourteen were clear.

*Precipitation.*—The total fall of rain and melted snow was 1.2 inches, which is .11 inch below normal. The total fall of snow was 6.75 inches. The last snow fell on the afternoon of the 19th; the rain and snow of that date did much good, and tame grass pastures responded quickly when the warm weather of the latter part of the month came.

*Wind.*—The wind was from the south 20 times; north, 19 times; southwest, 17 times; northeast, 12 times; southeast 11 times; northwest, 6 times; east, 5 times; west, 3 times. The total run of wind for the month was 9290 miles. This gives a mean daily velocity of 299.7 miles, and a mean hourly velocity of 12.5 miles. The highest daily velocity was 511 miles on the 13th; the lowest, 139 miles on the 27th. The highest hourly velocity was 35 miles, between 11 P. M. and midnight on the 28th.

The following tables give comparisons with preceding Marches:—

March.	Number of Rain.	Rain in inches.	Per cent of Cloudiness.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858	5	2.02	...	...	47.12	82	10	...	...	...
1859	6	2.88	56	SW	45.95	74	29	...	...	...
1860	0	.00	26	SW, NW	50.89	81	24	...	...	...
1861	0	.00	24	SW	41.20	79	20	...	...	...
1862	0	.00	53	NW	37.27	85	8	...	...	...
1863	0	.00	26	N	45.77	86	20	...	...	...
1864	5	2.12	35	NW	38.21	68	19	...	...	...
1865	6	2.27	...	...	38.21	74	-8	...	...	...
1866	...	...	...	...	...	...	...	...	...	...
1867	4	.63	68	N	24.58	52	-9	...	...	...
1868	5	.93	48	SW	47.88	87	19	...	...	...
1869	4	1.06	49	SW	35.24	72	-2	28.79	29.30	28.30
1870	5	1.45	50	NW	34.82	68	0	28.69	29.15	28.20
1871	4	1.02	45	NW	46.92	83	22	...	...	...
1872	5	.92	44	SW	37.34	73	18	...	...	...
1873	4	.71	44	SW	42.02	74	3	...	...	...
1874	1	.30	58	NE	37.99	68	18	28.65	29.14	28.20
1875	2	1.21	44	SW	36.86	80	5	28.65	29.06	28.18
1876	6	3.96	58	NW	32.65	66	5	28.74	29.25	28.24
1877	3	2.70	67	SW, NW	38.87	76	3	28.76	29.18	28.23
1878	5	1.77	49	SW, NW	49.53	81	17	28.64	29.00	28.15
1879	0	.00	44	S	46.63	85	10	28.67	29.14	28.22
1880	2	.50	42	NW	41.24	80	-2	28.57	28.99	27.97
1881	1	.75	50	NW	36.20	72	13	28.54	28.91	27.80
1882	2	.80	42	SW	46.73	78	12	28.67	29.15	28.04
1883	3	1.05	49	NE, SW	39.19	73	13	28.70	29.23	28.10
1884	5	2.36	57	NE	40.25	75	8	28.60	29.00	27.74
1885	3	.33	28	SW	40.34	73	15	...	...	...
1886	7	2.00	52	S&NE	38.72	82	9	28.87	29.39	28.37
1887	3	.39	26	SW	42.85	83	23	28.96	29.47	28.61
1888	5	2.48	36	...	35.77	83	6	29.05	29.55	28.47
1889	3	1.99	32	...	43.01	77	15	29.05	29.42	28.48
1890	5	.13	35	E	37.18	77	2	28.95	29.46	27.93
1891	6	2.24	44	N	33.43	69	-4	28.88	29.33	28.40
1892	7	4.60	42	NE	39.16	77	10	28.89	29.34	28.14
1893	5	.99	30	S	39.65	87	6	28.83	29.43	28.17
1894	4	.67	25	N&S	46.04	86	8	28.87	29.48	28.32
1895	3	1.20	33	S	41.73	95	5	28.82	29.24	28.36
Sums	134	48.43	1511	...	1497.4	...	...	661.84	...	...
Means	4	1.31	43	SW	40.47	...	...	28.78	...	...

### WIND RECORD.

March.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889	6871	221.64	537	55	9.23	37
1890	8180	263.87	630	89	10.99	44
1891	9751	314.57	662	126	12.67	37
1892	11133	359.13	690	105	14.96	44
1893	10231	330.03	627	32	13.75	39
1894	11342	365.87	686	132	14.82	45
1895	9290	299.70	511	139	12.50	35
Sums	66798	2154.8	4343	678	88.92	271
Means	9543	307.83	620	97	12.70	39

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

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### A NEW BLACKBOARD COMPASS.

The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address **O. P. HOOD,** Supt., Manhattan, Kan.



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### BIRD NOTES FOR THE SEASON.

BY PROF. D. E. LANTZ.

THE first wave of the spring migration has passed, and has left with us but few of the migrants. The next wave of newcomers will bring far more of the summer residents with it. Of the ducks, the pintail, the red-head, and the canvas-back have gone north, leaving with us small flocks of the widgeon, the green-winged teal, and others. The blue-winged teal and shoveller are later migrants, and occasionally a pair of them will stay with us for the entire summer.

Of the waders, the phalaropes, the greater yellow-legs, some of the sandpipers, and the golden plover have been observed. Possibly the more common spotted sandpipers have arrived, but I have not yet seen them. Several pelicans have been killed in the neighborhood, and about a week ago, the "stilly night" was made vocal by the cries of the migrating whooping cranes.

On Thursday afternoon, a long walk over the hills south of town showed a great scarcity of birds other than our common resident species. Of crows, meadow larks, and the prairie horned larks there was an abundance. A field sparrow, a pair of cardinals, and another small finch were the only fringilladæ seen, if I may except the ever-abundant English sparrow. A single warbler, either the Tennessee or the orange-crowned, was also seen.

This apparent absence of bird-life is largely due to the time of day of the observations and the hot weather. The forenoon or late evening are much more favorable times for finding birds. Then there is also a marked difference between the hills and the river valley at present. On the upland ravines there are few signs of sprouting leaves, while in the valley the elms, box-elders, and willows show in great patches of green. Only the red-bud and plum blossoms give variety to the now prevailing gray color of our hills.

The crows have nested, and in some cases, no doubt, the young have been hatched. On the upland I came across a nest of the horned lark, with a single down-covered young bird in nest. It was probably a week old, but an inexperienced person would guess it to be much older. It is wonderful how rapidly young birds grow; they seem to be hungry all the time. The nest of the horned lark is built upon the bare ground without any shelter except that of a stone or bunch of grass near by. They often take advantage of a horse or cow track made in the soft ground, and in this hollow construct a rather neat nest of grass and other fibrous material, sometimes lined with bits of hair or fur.

The robins, blue-birds, and sparrows have taken up the duties and responsibilities of summer house-keeping. The robins seem to be more plentiful in town than ever before, while the blue-birds seem to have almost disappeared. The absence of the latter may be attributed to the presence of the English sparrow in such large numbers that they monopolize the favorite nesting places of the blue-bird.

The English sparrow first appeared in Manhattan about fifteen years ago. They have increased so rapidly in numbers that they now not only occupy all the nooks and crannies about the houses and out buildings in town, but every hollow limb or other available nesting place on the borders of the woods and along the river for miles around. They have appeared at nearly all the farm houses in the country around, and not having enough nesting places under shelter, they build their unsightly bunches of hay and feathers in the evergreens and other trees about our lawns and door yards.

A few days ago I was surprised to find a great many apparently fresh blossoms under an apricot tree. A very little watching showed that a flock of English sparrows were engaged in plucking them off the tree. They did not, apparently, eat any part of the blossom, but merely pecked at one until they succeeded in dislodging it, and then dropped it to the ground and attacked another blossom.

Among the most welcome of spring arrivals to me has been a pair of Bewick's, or Baird's wrens, which have now been with us for about four weeks. They are evidently intending to stay for the season, for I have several times seen them carrying building material. The song of this wren is certainly beautiful. It is not so varied as that of the Carolina wren, but the notes are richer and the song fully as loud. Like the brown thrasher it selects the highest branch of a tree for its station, and then pours out a contin-

uous song for an hour at a time. Only once before has this bird been observed nesting in Manhattan. A few years ago, one built its nest in a paint keg hanging in a wood-house in town.

### AMONG OUR ORNAMENTALS.

BY PROF. S. C. MASON.

OWING to the comparatively mild winter the display of bloom among our ornamental shrubs bids fair to rival anything we have had for a number of years.

First to appear were the "golden bells" of the forsythias. *Forsythia suspensa*, with its long, pendulous twigs was much better filled than *Forsythia Fosturei*. These flowers appear in advance of the leaves, and a large bush is very showing and striking. After the average winter but little bloom is seen except on branches that have been covered.

The earliest spirea is *Spirea Thunbergia*. These tiny white flowers appear with the opening of the soft feathery leaves, and render this species one of the most attractive of the early ones. A tendency to killing back at the tips mars the beauty of this shrub, but can be corrected in a great measure by judicious pruning.

The bridal wreath, *Spirea prunifolia*, follows next, it has numerous small white flowers like a wreath of miniature rosettes. The choicest of the genus, *Spirea Van Houttei*, is not yet in bloom, but the early foliage is very pleasing, and a rich green color and graceful habit make this one of our most valuable shrubs throughout the entire season.

The golden spirea, which is a golden-leaved variety of *Physocarpus opulifolia*, seems to have suffered more than most others from the drought of the past season, and is not coming out in as good form as usual.

Among the bush honeysuckles the varieties of the Tartarian are the first to come into leaf, and help to brighten the lawn while many others look dead.

*Lonicera fragrantissima* forms a rather ragged bush which gives scattered blossoms of very delicate odor before the stiff, leathery leaves appear.

The Japan quinces are in their glory just now. Such a blaze of scarlet bloom is seldom seen. There is a variety of shades from nearly pure white, pink as soft as a peach blossom, to a fiery scarlet and a deeper, darker shade.

A double-flowered variety of plum, *Prunus triloba*, vies with the flowering almond in the beauty of its double rose-like flowers.

The old *Caragana arborescens* seems to withstand all hardships, and never fails to produce a good show of the yellow pea flowers. Two species from Professor Budd's collection, *Caragana grandiflora* and *C. Redowski* have more slender and graceful trees and larger and more abundant blossoms. Their tendency to sprout from the roots is a very serious fault for lawn shrubs.

Two ornamental varieties of the apple are now in bloom. *Pyrus malus*, var. *flexilis* has a graceful, pliant growth and delicate white blossoms. *P. m.* var. *Spectabilis*, the Chinese double rose-flowered crab, has a more upright habit of growth and very pleasing semi-double rose-tinted flowers. Both the tall service tree, *Amelanchier Canadensis* and the dwarf variety so often sold as "blue-berries" by nurserymen, are now adding their white blossoms to the spring picture.

Our daintiest native tree, the red bud, *Cercis Canadensis*, is covered with the rich pink blossoms on the dead-looking, leafless twigs. Lilacs both white and purple are just coming into bloom. All these, added to the pervading bloom of plums, peaches, pears, and apples, make one feel more like enjoying the beauties of a Kansas spring than "digging" for the hidden beauties of the College text-book.

### MARTYNIA PROBOSCIDIA.

BY J. B. S. NORTON, '96.

ONE of the most curious things that I have ever observed growing on Kansas soil is the Devil's Claw plant (*Martynia proboscidea*, glox.), sometimes called Unicorn plant.

This plant is a native of the Southwestern States and Mexico. It is probably found indigenous over the most part of Kansas. I have seen only a few specimens wild about Manhattan, but in Jewell County where I first saw it growing, it is all too common, being a bad weed on many farms.

*Martynia proboscidea* is a very succulent, rank-growing, low-branching annual. The stems are short and thick, and the whole plant spreads out wider than it is in height. It is usually about three feet



across when full grown. The leaves are numerous, large, and cordate. The flowers bloom in July or August, and are borne in short clusters not reaching much beyond the leafy part of the plant. They are large, dull white, spotted with yellow and purple, and appear very much like a catalpa flower, to which they are related.

The most curious part of the plant, however, is the fruit. It is about two or three inches long and an inch thick, and tapers beyond this to a long, curved beak to which the plant owes its name, *proboscidea*. The outer part of the fruit is fleshy, and at maturity splits away from the inner part, which is black, hard, and horny. When the fruit is ripe the long, slender beak splits down to the body of the fruit, which contains numerous large, rough seeds, and spreads apart, forming two strong, formidable looking claws which are curved inward just at the proper angle to catch hold of and remain fast to anything that comes in contact with them. The whole fruit, when dry and separated from the plant, might be taken at first glance for the skull of some animal with two long horns rather than the product of a plant. The claws are probably for the purpose of attaching to animals, which by their locomotion carry and scatter the seeds thus disseminating the plant.

The whole plant is thickly covered with glandular hairs which secrete a viscid liquid having a disagreeable odor. This secretion makes the leaves cool to the touch, even in hot, dry weather. A large number of small insects are caught and killed by this sticky fluid, and the plant is probably insectivorous (Beal, Proc. A. A. A. S., 1875) and absorbs nutriment from the bodies of the insects caught.

This plant is cultivated, though not extensively, in some places, the young fruit being used for pickles, much the same as cucumbers. It is also grown as an ornamental plant. But from my experience with it, I think it would be a very bad policy to allow it to become a weed, as it is very difficult to eradicate, the claws are troublesome to stock, and owing to its succulent growth, it takes a large amount of moisture from the soil.

#### Quit Farming or Quit Growing.

How it is that so many farmers say farming don't pay, and yet stick to it like sin to a sinner? If they find it don't pay why don't they quit it, and go at something else that pays better? Every one should be in the business where he can do the best. Therefore, if farming does not pay them as well as some other business would, why don't they quit farming and get at the business that will pay them better? If they are not smart enough to get into any other business that pays better, and farming pays them better than any other business will pay men of their grade, why don't they take in the situation and stop disgracing themselves by running down their vocation?

I am getting tired of farmers finding fault with their business. Yes, tired of seeing some that are farming—because they are not smart enough to make a living any other way—not only disgracing themselves but all of us who farm by continually arguing that farming is a poor business. Do people of any other trade or business always speak against their own vocation? And will it not lower us as a class in the estimation of all classes? We all know that the farmer has many things to contend with—bad seasons, failures of crops, loss of stock, low prices some years for what he produces—but yet we know that if he is the man for the place he will make it pay. I know some farmers who are making money every year, some years more than others, but still ahead some every year.

Like causes will bring like results, every time. Therefore, if these fellows who are always finding fault with farming understood their business as well as those who succeed, they might prosper, too. From the fact that there are some farmers in every community that are prospering we must come to the conclusion that it is not the business that is to blame if some fail in it, but it is the man who manages the business. If he managed his farming as well as his successful neighbor, he would succeed as well as he. If not, why not? We might as well say, because many in the mercantile business do not succeed that the mercantile business don't pay, as to say, because some (that are not the right material to make good farmers) fail in farming that farming don't pay.

We have been taking agricultural papers for thirty-five years or more, but never saw as much about farming not paying as in the last year. What good does it do these grumblers, anyhow, to be continually trying to lower our calling in the estimation of all men? Does it make matters any better? Do the editors pay them for their croakings? I hardly think so. Can't they see that it is a burning shame, a disgrace, to be all the time running down our occupation till others will look down upon us as poor clodhoppers and slaves that can't help ourselves, but have to continue on in the same degraded occupation.

I repeat, if they don't like the business why don't they quit, and if they can do better at that than anything else, why don't they quit finding fault with it? If they just want to let people know that farming don't pay them they need not put it in the papers,

for every one that goes by their farm can see that. We can easily tell, in most cases by passing farms, who makes it pay and who does not. You can tell the thrifty, prosperous farmer by his surroundings, and also the one who is a failure. But they do not seem to think they are advertised enough without they publish their thoughts in the paper. Some of them, it is true, are ashamed of their own thoughts, and either sign their initials or some nom de plume, as "Old Farmer."—*Samuel Mills, in Ohio Farmer.*

#### Improving Position of the Farmer.

In estimating the relations of supply of agricultural products and the demand for them, account is usually taken only of the civilized populations of the world. It is not infrequently assumed that those portions of the globe which are now occupied by barbarous, and especially those occupied by savage races, are yet to be appropriated by the Caucasian races, such as America was taken from the Indians. The expectation has been that the inferior races will, as in the past, disappear before the advance of the conquering people. In the ages of the world when war and wholesale slaughter were esteemed the callings of first honor, this was the usual course. So, too, in the settlement of our own country, the Indians have disappeared on account of the ill adaptation of their dispositions to the conditions of civilization. Men thought of the subject to penetrate no deeper than this, almost the entire area of America might be estimated as a possible addition the heritage of the great conquering race. Some have also conjectured that large areas of Asia, now occupied by less progressive races, may be considered as possible conquests.

In estimating the world's ability to feed and clothe it is a mistake, however, to assume that, even should these countries become objects of conquest, they may be added to the bread-producing areas available for the conquerors. The same period which has witnessed the disappearance of the red man before advancing civilization has also witnessed the rapid multiplication of the black man on the same lands from which the red man had disappeared, and contemporaneously with the aggressive race before which the red man disappeared. Indeed, the multiplication of the black population has been more rapid than that of the white. So, also, to prevent the undesirable increase of Asiatics among us rigorous laws have been enacted for their exclusion. Under the fostering influences of modern civilization these races have their most rapid increase. While it is not conclusively known that in their native countries they will thus prosper under improved conditions, indications point in that direction, and it is quite likely that the demands upon their agricultural resources will, in the future, as in the past, be about equal to their production. It is doubtless true that with civilization the productiveness of the land is increased. It is also true that with civilization people's wants are greatly multiplied.

As to populations, a recent newspaper paragraph says: "German geographers have made a careful estimate of the population of Africa, and place the total at 163,953,000, which is 42,240,000 more than the aggregate population of North and South America. Europe and Africa combined have a population of 521,332,000, though their area is not greater than that of all America. The German estimate of the population of the world now is 1,480,000,000, and one of the best authorities of the Royal Statistical Society says it will be increased by the year 2,517 to 33,586,000,000.

The population of all America is placed at 121,713,000, and has appropriated nearly all of the arable areas. The process of crowding must now commence.

Relief from this crowding cannot be looked for in the opening of the thickly-peopled countries of the old world to civilization, unless, indeed, wholesale butchery is anticipated.

The changing agricultural situation is already seen in some of the earlier effects. The day of the merchant prince may not be past. The day of great profits to the manufacturer may recur again. The day of the farmer prince is surely in sight. The advantage presently—perhaps soon—to be enjoyed by the owner of the soil; the desirability of engaging in the most remunerative occupation of the time, the pleasure and exaltation of conducting scientific farming and of transacting the business at a profit, have already been foreseen by students of the situation. The stately farm residence, surrounded by the broad acres of ever-increasing value, may be almost an ideal picture now, but is likely to be no strange sight in the future.

True, the rural conditions under which each man tills his own acres, and each owns the acres he tills, is the more Utopian. It is also farther away. Efforts at colonization are more or less successful, and they succeed measurably in effecting a desirable distribution of ownership. But the foresight of the thrifty farmer is causing him rapidly to anticipate the advance in the values of productive land and the prosperity of the producer of primary food and fabric supplies.—*Kansas Farmer.*

#### Woman's Life on the Farm.

If you will stop to think of your life in the country, to weigh its possibilities, and then act upon them, you will soon find yourself not only satisfied to live on a farm, but rejoicing in its restfulness, its unbounded opportunities for self improvement, and uninterrupted enjoyment of the best society in the world, that between bindings. Perhaps the greatest blessing, next

to an educated, fulsome mother, that can fall to anyone is to have a real live, alert teacher; one who reads and can teach children to read lovingly, cultivating a taste for fine reading, which through life will shut out every possibility of loneliness. The student habit once acquired is a great fortune to any one, and to the woman shut within walls during a long, cold winter, it is life itself. The habit of reading systematically is a thing of training, and many an earnest young woman fails of accomplishing her desires simply because she has not been taught how to read or perhaps has not the tools at hand. Speaking for myself, I would not attempt any thing in the line of reading without a dictionary at my side, as well also as an encyclopedia and a biographical dictionary; but there were many years before I owned the last two, and in those years it was that my mother cultivated in me a love of study. It all resolves itself back to the responsibility of mothers, and for girls not so fortunate as to have a mother who had opportunities, the next best thing is real, true teachers, and a depth of earnestness on your own part shall lead you to work out a way, no matter how dark seem the surroundings.

We are very apt to do those things we most love to do; we will push everything aside for the accomplishment of some well-loved scheme, and all of us can recall days when the thralldom of some novel has so wound us in its fascinating meshes that all the duties in the house calling upon us failed to make themselves felt. It is this spirit of concentration that we need to bring to bear upon everything we read, that will make us students indeed, and being students, opens up for us so vast a world of beauty and strength, that the most isolated farm house will not be lonely.—*Lida B. Lair, in Farmers' Home.*

#### Take Time to Live.

In reading the opinions of foreigners on our habits as a people, we Americans discover the fact that we are looked upon as an intelligent, thorough-going nation, but we are also considered a very speculative, money-loving people.

We are judged by Wall street, by our Vanderbilts and Goulds; in fact, the many are judged by the few. But are we not, generally speaking, becoming altogether too desirous of getting rich? Do we not too often see men bow down before the god of gold with all his iron chains, chains that some times crush out all the better impulses of the soul, leaving only the sordid desire for gain?

In this busy land merchants rush to their homes, swallow in great haste their meals, then back again to their stores for fear of losing a customer. Lawyers, doctors, farmers, and mechanics live in this whirlpool of haste, and we women are not exempt from it.

Many farmers' wives are toiling their lives away that they may be able to add a little to the pile for a rainy day, not realizing the fact that if age should find them in wealth and luxury they would not enjoy it if they smothered the nobler aspirations of the heart in their all absorbing work.

It is a God-given privilege to be able to work, and we who work know how labor sweetens rest, but it should not be the highest aim of our existence—this never-ending grind of toil that we may accumulate wealth. There is a higher and holier end in view. It is not all of life to live. If business men would take more time for the innocent enjoyments of life there would be fewer broken down men in our land; men bent and gray before their time. If fashionable women would spend less time at their mirrors and more of it in the cultivation of mind and heart, there would not be so many "wrecks" in society.

When business men as a class learn to begin each day's labor by asking the blessings of a kind Father upon their work, and then transact their business with an eye to the rights of God and their fellowmen, the more successful business era in American history will have been reached. When farmers realize the need of more culture in their homes, instead of so much work, when through the heat and toil of the day they think of the pleasant home and dear ones waiting their coming, when they thank their God as they return at evening that their lot is cast in this glad, free land, then indeed will their home-coming bring happiness.

But how may we farmers' wives arrange matters so that we may have more time for the improvement of our minds and those of our children? The washing and ironing must be done, and the house must be kept clean, and the baking and boiling and stewing must be attended to; then there are little stockings to be darned, and the little jackets must be mended, and oh! how busy it keeps us. But sisters, the fault lies to a great extent at our own doors. We must learn to economize time, and to do this, we need not let our children go with uncombed heads, nor treat our husbands to undarned stockings or muddy coffee. We can make our clothes and those of our children with a view to the ironing. We can dispense with a few of the furbelows. Let good sense, the neatness and fit of a garment, and the harmony of colors make up for the lack of tucks, ruffles, and puffs.

We may also keep our houses neat and clean without becoming mere machines. Why, there will be stoves to polish, and floors to scrub, and furniture to shine, long after our tired hands are forever at rest.

Let us get more good books for ourselves and our children. These book treasures which they collect through life, one by one, like mile stones along the way, will be more precious to them in after years than gold or jewels. And as the day dies

"The night shall be filled with music,  
And the cares that infest the day,  
Shall fold their tents like the Arabs,  
And silently steal away."

—*Jennie Oaks.*



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20th.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

**GENERAL LOCAL NOTES.**

Pres. Fairchild is in Topeka on College business.

Secretary Graham goes to Topeka today on business.

The students' pay roll for March amounted to \$631.34.

C. F. Doane, Third-year, was visited by his father last Friday.

Mark Kirkpatrick received a call from his father on Thursday.

The Ionian exhibition on the 26th promises to be an entertainment of a high order.

Workmen are engaged on the ditch for extending the steam pipes to the Armory.

L. A. Nelson, First-year, had the pleasure of a visit from his mother and sister several days last week.

R. J. Barnett, Fourth-year, was called to his home in Jackson County, Monday. He returned to classes Thursday.

F. E. Uhl, Third-year, who has been absent from classes this week on account of severe lameness, returned to College Friday.

Miss M. A. Martin, general agent for C. F. Beezly & Co., book sellers of Chicago, visited the different departments Tuesday morning.

The grounds about Science Hall are being greatly improved by leveling off and planting shrubs and evergreens as well as sowing blue grass seed.

Mr. Abell, representing the Henderson-Ames Company, outfitters of Kalamazoo, was at College one day this week to bid on the 200 Cadet uniforms required.

Allie Cochran, First-year, was among the several who missed classes last week on account of mumps. The conditions here seem extremely favorable to the growth of the germ.

The dinner on Commencement Day will be furnished by the ladies of the Christian Church. The good dinner of three years ago by these ladies will insure them a liberal patronage.

The Military Department has received 50 new guns from the Cambridge arsenal. With the new uniforms soon to be purchased, the Cadets will be better equipped than ever before.

The College and town base ball nines crossed bats yesterday for the first time this year, resulting in a score of blank to blank in favor of the town Club. The "Ag." band accompanied our team to the grounds and played a couple of airs.

Prof. Will lectured in the Southeast Society Room last evening on "Religion's Work in the World." A goodly company listened to the lecture and the musical selections—a vocal solo by Miss Mary Lyman and a piano solo by Miss Gilkerson.

The officers of the Corps of Cadets for the Spring term are: Adjutant, W. H. Painter. Company A—Captain, W. H. Steuart; First Lieutenant, F. E. Uhl; Second Lieutenant, V. Emrick. Company B—Captain, F. R. Jolly; First Lieutenant, G. W. Finley; Second Lieutenant, M. Wheeler. Company C—Captain, J. V. Patten; First Lieutenant, W. A. Cavanaugh; Second Lieutenant, I. A. Robertson.

The iron shop at the end of this week loses the valuable services of Foreman Brooks, who has given efficient service since September. Like our previous Foreman, Mr. Brooks finds an opportunity to very largely increase his salary in another line of work. He takes charge of the Capital Iron Works of Topeka, where the good wishes of the Mechanical Department and all who have made his acquaintance will follow him.

At the business meeting of the Y. M. C. A. last Friday the following officers were elected: Ed. Webster, President; F. E. Uhl, Vice-president; G. W. Finley, Recording Secretary; L. W. Hayes, Corresponding Secretary. The Association voted to send Pres. Webster to the Summer School at Lake Geneva, Wis., in the latter part of June. Committees were appointed to arrange for the publishing of the second number of the Students' Handbook. Two new members were voted in.

The March Quarterly Report of the Kansas State Board of Agriculture is received. In its preparation the design has been to make it practically helpful in solving some of the more pressing problems now confronting our agricultural people, and especially during the present and ensuing season, when they will so much need judicious counsel, rather than in the remote bye and bye. Its five chief features are: Information as to the worth, uses, and cultivation of alfalfa; discussions of irrigation as applicable to

Kansas, especially upon the higher lands; notes on Kansas wells and their ascertained or probable water supply, west of the sixth principal meridian; subsoiling, and the natural distribution of roots in field soils; also, the many valuable and interesting addresses, papers, and discussions at the Board's twenty-fourth annual meeting, in January. As the Legislature failed to provide postage for this report, parties desiring it should remit six cents in stamps to F. D. Coburn, Secretary, Topeka.

The membership and instrumentation of the Cadet Band for the spring term is as follows: R. H. Pond, drum major; A. B. Brown, solo E-flat cornet; R. H. Brown, solo B-flat cornet; C. C. Rambo, solo B-flat cornet; E. L. Brockway, first B-flat cornet; R. R. Keely, first B-flat cornet; A. E. Ridenour, second B-flat cornet; G. F. Lechner, second B-flat cornet; H. F. Hatch, second B-flat cornet; J. A. Conover, B-flat clarinet; G. B. Norris, piccolo; J. J. Johnson, solo E-flat alto; W. I. Joss, first E-flat alto; T. L. Jones, second E-flat alto; G. C. Wheeler, B-flat flugel horn; A. L. Peter, first B-flat tenor; A. Smith, second B-flat tenor; H. G. Johnson, baritone and leader; J. F. Crowl, B-flat tuba; C. Lyman, E flat tuba; A. S. Berry, snare drum; B. W. Conrad, bass drum.

The *Horticultural Review* of London, England, devotes a full page to a description of this College, prefacing it with the following paragraph: "We are not anxious to continue the exportation of our best men from this country, but would prefer their being encouraged to remain at home. Probably nothing would have so beneficial an effect in this direction than the establishment of a system of agricultural education on economical terms such as that at Manhattan, Kansas, U. S. A. We are so much interested in the common sense system adopted there without any useless red tape and officialism, that we reproduce the terms and particulars on a prettily illustrated prospectus which has recently reached us. For conciseness and utility we would commend this prospectus to all Technical Education Committees, Parish, and County Councils as a model."

The College Societies will be served during the spring term by officers as follows: Alpha Beta Society, President, Nora Fryhofer; Vice-president, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson. Hamilton Society, President, W. H. Painter; Vice-president, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, Leslie Fitz; Board of Directors, E. C. Joss, S. Robbins, F. Yoder, C. D. Adams, V. Maelzer. Ionian Society, President, Flora Day; Vice-president, Mabel Selby; Recording Secretary, Lizzie Stingley; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Marshal, Mabel Selby; Critic, Hortensia Harman. The term election of the Webster Society is postponed until tonight.

A telegraphic announcement in the *Army News* says that Captain Harry G. Cavanaugh has been ordered to report by letter to Governor Morrill for such service pertaining to the National Guard of the State as he may be able to perform without interfering with his duties as Professor of Military Science and Tactics at the College. This order is an excellent one, and will be of direct benefit to the military department of the State. The Adjutant-general is desirous of learning something about the status of various companies of the National Guard, just what State property is in their possession, etc., and finds that the records of the office are not adequate. Captain Cavanaugh's duty will be to travel over the State during the summer for the purpose of inspecting the companies, becoming acquainted with their needs, defects, etc. Captain Cavanaugh will prove an excellent man for this duty. His ability and experience as an army officer may be very effectively employed for the benefit of the National Guard.—*Nationalist*.

**Experience with Ensilage.**

The Farm Department has just issued Bulletin No. 48, treating the topics, "Six Years Experience with Ensilage," "Some Forage Plants," and "Renovating a Prairie Pasture." The experiments with ensilage are summarized in the following paragraphs:

"Uniting and averaging the results of the experience here detailed, we find that during the six years we have put away 1,045.22 tons, of which 807.9 tons were sound ensilage when taken out, 102.44 were rotten, and 128.87 tons were lost in the process of curing or, putting it in per cent, 77.2 per cent of the total amount put in was good feed, 10.5 per cent was rotten, and 12.3 per cent lost. This ensilage was fed during a total period of 990 days, or an average of 165 days each year, to an average of 51 head of cattle. The average daily feed per head for the entire period is almost exactly 32 pounds. These results may fairly be taken to represent ordinary conditions on Kansas farms.

"If we estimate that 77.2 per cent of the amount put in can be taken out sound and available for feeding, or about 1,544 pounds for every ton put in the silo, we find that, at the average feed of 32 pounds per day, one ton will last one animal 48.2 days, or 100 tons will last a herd of 25 head 192 days; and, in a reasonably favorable season, with good soil and good cultivation, this 100 tons may be grown on about 10 acres. What other method of handling corn fodder will maintain an average farm herd during the long winter season, from grass until grass comes again, on so small an area? It should be noted that, of the cattle fed on ensilage each year, from one-fourth to one-third were young stock, which, of course, did not eat so much as grown cattle, and the amount fed to mature cows should be increased above the average here given accordingly. It may also be

noted that the cattle would eat a large portion of the rotten and waste material thrown into the yard. They seem to delight in working over what was thus rejected, when in the yard.

"While ensilage has been a most satisfactory feed to cattle, I would in no case recommend that it be fed to breeding bulls. I have repeatedly observed that when bulls have fed on it they seem to lose virility and become slow and uncertain breeders, from which condition, however, they may again recover when fed on dry fodder and grain.

"Ensilage is an excellent feed for dairy cows, but it will occasionally taint the milk, while at other times again it will not effect it. The taint seems to be influenced by the condition of the cow's system. This may, however, be entirely avoided by feeding the ensilage immediately after milking instead of before milking, as is usually the case, the practice in most cases being to feed the cows the first thing in the morning, and in like manner before milking at night. We have adopted the plan of feeding after milking with entire satisfaction."

**GRADUATES AND FORMER STUDENTS.**

Ida Pape, Third-year in 1892-3, visits College this week.

Bertha V. McNair, First-year in 1888-89, enjoyed a few hours at College last Monday.

C. P. Hartley, '92, writes from Fraser, Idaho, of his desire for post-graduate study.

Walter Harling, '94, spent a few hours with old acquaintances and visiting classes last Wednesday.

Jennie R. Smith, '94, attended chapel exercises yesterday afternoon. She will be at home until Institute begins.

Albert Dickens, '93, has been visiting friends here since the 5th. He has just finished a term of school at Bushton.

E. J. Abell, Fourth-year in 1892-3, stopped at the College a few moments last Tuesday and left word that he would graduate with the Class of '95.

J. C. Christensen, '94, who has been teaching school near Maple Hill, visited College yesterday. His school has closed, and he now goes home to work.

F. E. Way, Second-year in 1888-9, has just graduated from the Kansas City Medical College, and returned to his home in Talmo, Kansas, to practice.

K. C. Davis, '91, Principal of the High School at Austin, Minn., plans future work in a special line in one of the natural or physical sciences, and will probably spend the summer at his alma mater in study.

The "P. G. row" in Chapel consists of the following persons: Phoebe Haines, '83; L. P. Brous, '86; J. E. Payne, '87; Bertha Kimball, '90; Effie J. Zimmerman, '91; G. L. Clothier, Grace M. Clark, '92; Laura G. Day, Maude Gardiner, A. Dickens, '93; Lorena Clemons, Lorena Helder, Frank Ames, I. Jones, '94.

**A Field for Young Men.**

Mr. H. M. Cottrell, ['84], Superintendent of Ellerslie Farm, in encouraging words to young men who select agriculture as a calling, says of the manager of Mr. Theodore Havemeyer's farm that he had a thorough college education and a good business training before he understood farming. This farm was made up of run down farms, and today under thorough management it carries 400 Jerseys, yet so successful is the management that new barns and double the cattle kept are to follow. This farm he says cuts 36 tons of ensilage to the acre and that its silos hold 2400 tons. The largeness of this enterprise and the growth of other farms of large dimensions are made texts for the encouragement of ambitious boys who require greater largeness of life than they will find in working smaller farms without capital. Particular attention is called to this as an opening field for young men who will secure an education for farm management.

This thought has occurred to us in relation to New England estates passing into the hands of men of wealth of our large cities. These farms are not intended sources of profit to their owners, but sources of pleasure, and the better qualified the managers of these farms by education to make them a source of pleasure the larger the remuneration that will follow.

Since farming has become more and more a science and therefore more and more fascinating as an occupation, attention to agriculture is increasing. Our cheap farms are passing into the hands of non-resident owners and generally into the hands of men who have a love of nature, and the more the managers know of the laws of nature and apply them in practice the deeper they will serve the purpose of the owners.—*Mirror and Farmer*.

**Industrial Training.**

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.



### Crops and the Weather.

There is just now much anxiety about the wheat crop. Reports as to the outlook do not fail to mention the importance of seasonable rains. Much of the disaster mentioned is attributed to scarcity of moisture during the fall, winter, and early spring. Even that killed by freezing is charged up to drought. There is less error, even in this change, than the inexperienced suppose. It is undoubtedly true, that, when the plant has been enfeebled by lack of sufficient moisture, and is about on the point of giving up the ghost it is much more easily "done for" than when full of vitality. Some three weeks ago the writer passed many thousands of acres of wheat of doubtful promise if not of hopeless loss. The drought of the fall and winter and the cold weather of February and March had blighted it. But farther out upon the plains than any of these fields, on the ranch of Col. C. D. Perry, at Englewood, Kans., was a field of volunteer wheat, which had received a working with the disc harrow, and one irrigation since last harvest, and was as green as a meadow in May and was entirely unharmed by the vicissitudes of climate. It was rather too thick, on account of abundant tilling, but it was, and probably is to-day, good for thirty or more bushels per acre.

As illustrating the tenacity of life of the wheat plant when the proper conditions of moisture in the soil are maintained, Col. Perry related an experience wherein a field of irrigated wheat was cut down by hail just as it was coming into head. He accounted it lost and gave it no further attention, intending to plow the land for fall sowing at the proper time. A friend who had passed the field some time after the storm, asked him why he did not harvest his wheat. On going to the field it was found that new shoots had made heads and a fine harvest was the result.

It is claimed by some fruit-growers who have irrigated their orchard that the strong and vigorous fruit buds borne by properly irrigated trees are able to withstand freezing that proves disastrous to the enfeebled buds of drought-afflicted orchards.

To the gardener and the truck farmer the advantages of irrigation are universally conceded. That the application of water to a small tract of land makes it more valuable than a large area of unirrigated land has been fully demonstrated. It has been assumed, because a family can live well from the products of a very few acres under irrigation and high culture, that therefore the small holding with all there is in its favor will become universal with the advent of irrigation. But it is becoming apparent that under efficient administration the advantages of irrigation accrue also to the farmer of broad acres; that with the artificial application of water the elements of uncertainty disappear and farming becomes applied science. Under such circumstances not unlikely the average area of farms will increase rather than diminish.

But whatever may be the result of irrigation upon social arrangements, the certainty of returns under it is a welcome change from dependence upon the caprices of the weather.—*Kansas Farmer*.

### Beautiful Home Surroundings.

Every home owner should be a landscape gardener—good taste is very necessary in laying out grounds so that they will be attractive and present a pleasing effect at all seasons of the year. There is plenty of room for study and investigation, contemplation, and real good common sense regarding this matter, and no "hit or miss" work will do.

The lay of the grounds must be studied, the size and many other points must be considered, so that the planting of trees, shrubs, and plants may be intelligently executed.

How many homes are disfigured by poor and thoughtless planting that might otherwise be made beautiful and attractive. On the other hand, how many naturally bleak places are made inviting and homelike and even grand by a judicious laying off of the grounds and an intelligent selection of trees and plants. Such cases as these may be seen any day in almost any locality. A person must be unobserving, indeed, not to see these differences. The beautiful simply displays the good taste of the one who did the planting.

There is a right way and a wrong way of doing things, and it behooves us all to choose the right way in all affairs of life. It is very often as easy, if not easier, to do things right than it is to do things wrong. A tastily trimmed bonnet does not need to cost more than a homely one, and yet note the difference. An ill-cut coat may cost as much as a "perfect fit," and yet what is the effect? The goods may be "all wool and a yard wide," but where, oh where, is the style? Yes, a good-looking horse is often spoiled by a poor harness, and even beautiful flowers may be made to suffer by poor arrangement. Just ask the florist, and he will tell you why. Let us look at these facts as they are, and study how to make our places more beautiful. I believe it is our duty and privilege to do so. Pleasant yards, choice trees, plants, and flowers, when properly combined, make a grand display, and to know how best to make this display is the duty of every American landlord.—*Farm, Field, and Fireside*.

### A Sign of Prosperity.

In traveling through the country, when a tidy farm is passed, with fences in good order, buildings looking neat and trim, trees pruned and clean, all know the resident is one who takes pride and interest in his farming, and it pays him to do it. It takes but a few days each year to keep the brush cut away from

the fences, to nail up a board fence and there that may have become loosened, to keep the fence up straight with no weak places to tempt stock to owner's or neighbor's fields of grain or grass, to put the implements under shelter when not in use, to pick up boards lying about the barn and house, to trim the fruit trees and cut out all dead or dying branches, to mow the lawn at least once a year, to arrange all gates so they will swing on their hinges, to have a well kept garden, a good supply of small fruits, the pump in good working order, plenty of dry wood under shelter, to keep the roadside mowed, bushes cut down; to keep outlets of expensive under-drains open, to clean out all open ditches, to look after the stock frequently. If you have in the past neglected these things, resolve that you will reform, and that strangers in passing your door, may say: "A good farmer resides there."—*Breeder and Sportsman*.

### Is Grip Contagious?

Many physicians still fail to believe in the profound difference between genuine grip and a heavy, sudden cold, which very often progressively develops into fatal pneumonia. No unquestionable microbe of grip has yet been clearly demonstrated; but it certainly has very suspicious resemblance to the diseases that are doubtless the result of attacks of bacteria, on some portion of the human organism. It would be of great advantage to the community if people would treat it on an *a priori* assumption that it is a microbe-wrought mischief and is communicable—so that immediate isolation will be decreed when a member of a family is attacked. Even if the attack itself is light, the after effects are often deplorably obstinate and severe, and the great number of cases reported this year as accompanied by other complaining troubles, many of them chronic, suggests the notion that the person who already has some disease that has undermined his vital force, falls an early and easy victim to any communicable disease—and especially to the grip. There are strong reasons for believing that it is carried in garments. A volume could be made of authenticated cases of the communication of scarletina through the taking out of folded away clothes—and, stale as the advice is, people should wash, fumigate, and thoroughly disinfect after the grip. It begins to look as if the epidemic that started in Russia in 1890 and has practically encircled the globe, were never to receive its final quietus, and one reason for the lack of vigilance is that people do not appreciate the gravity of the mischief it works.—*New York Independent*.

### House-work a Science.

One of our bright women-editors writes: When a friend of mine married she said to me, "I will never putter along in the way the average American house-keeper does. I will reduce my house-keeping to a science, and that will leave me time to keep up my music, read, and keep step with my husband, and study to keep ahead of my children. I will not let wrinkles grow in my face, nor will I allow my hands to get blowsy and red. The great trouble is, women are not particular enough about themselves, and they do not do things in an orderly way, and then they worry."

Well, I have never found out how my friend got along. Sometimes I have wondered if the fair face was still as fair, and the hope to accomplish much still as bright as on her wedding day. There is, however, a way, whether we live in country or city, whereby we can make something of our lives. We are apt to remark that women, like water, find a level, forgetting the places where they are dammed up and kept in.

One of our sweet singers, when I asked her how she found time for poems in the multitude of her housekeeping cares, said, "I fasten my book up over my flour barrel, and when I can I read a verse, and then the work speeds while I think over it and commit it to memory."

She was one of the most toil-burdened women I ever knew, and yet many a sweet song of hers has sung itself around the world in hearts that have been made lighter by its comforting hopefulness.—*Farmers' Home*.

Newspapers and magazines should be considered as necessary for the home as food and clothing. Books are wonderfully cheap nowadays, and there is absolutely no excuse for any country boy or girl not having plenty of reading matter, and of that which is good. We should in every possible way seek to get the greatest possible good out of our lives, and we should seek continually to make life pleasant to those about us and in doing this we will secure contentment for our selves.—*Farm and Fireside*.

A toy has wrought a revolution in this country. The agitation in favor of good roads, begun by the bicycle manufacturers some years ago, and taken up and given force by the riders, has at length reached the masses of the people. Those who use the roads for pleasure have aroused those who use them for business, and these latter have come to realize how much of their income is wasted annually by carrying their produce to the markets over poor roads.—*San Francisco Argonaut*.

We please to marvel when a city person goes off heartily into the country, and yet the following paradox is true; namely, that it is city people who are precisely the best fitted for the country. Your average denizen of the country has no appreciation of natural scenery, never raises his eyes to notice it, scarce knows that it exists; thus he suffers all the disadvantages of the country without its principal compensation.—*William Henry Bishop, in the Century Magazine*.

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

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### "BLACK LEG."

BY PROF. N. S. MAYO, D. V. S.

THIS disease is one quite familiar to most stockmen of Kansas, and one which causes considerable loss from year to year. It is peculiar in its nature, and as observed in this State is confined to young cattle, and attacks only those that are in good condition, or fat. It seems probable that the constitution of the animals in this condition is weakened so that the germ can gain entrance and grow sufficiently to produce the disease.

The principle symptoms are lameness, fever, swellings along the back, but especially about the muscles of the hip or shoulder. There is a formation of considerable gas under the skin, so that rubbing the skin firmly causes a peculiar crackling sound. The tumors mentioned often contain a black gaseous fluid. The animal dislikes to move, and when exercised there is a stiffened, stilted action with marked lameness.

"Black leg" is caused by a parasitic germ; that is, a germ that grows naturally upon grass or other forage plants, and when taken into the system of a susceptible animal (young and in good condition) locates and grows most vigorously in the superficial muscles and in loose connective tissue between the skin and the flesh, causing the formation of gas, turning the blood very dark in color, and forming the tumors of black tarry-looking material.

It is not transmissible from one animal to another except by direct inoculation, nor is it transmitted by contact. Where several animals in a herd take the disease they are supposed to get the germs from the same source, either in the food or water.

The treatment of sick animals is not satisfactory; some recover, but more die. As soon as animals are taken sick, the well ones should be taken off the infected pasture so they will not get the germs from the food or water. The treatment generally practiced on the sick animals is purging, bleeding, putting setons, or "rowels," in the dewlap, running them, etc. The most rational and satisfactory treatment is preventive, and the following remedy has given excellent results. It is not announced as a sure preventive, but I have yet to hear of a failure. Take equal parts of sulphur, hyposulphite of soda, and common salt; mix thoroughly. If the young cattle are salted with this, say twice a week, not giving enough to purge them, experience seems to show that it will prevent "black leg" among young cattle.

### TAME FISH.

BY SECY. I. D. GRAHAM.

AS a great majority of those farmers who will attempt the raising of fish are also irrigationists, it will not be supposed that the fish raising is the chief object to be sought. Fish culture will be, with them, but a side issue, like the raising of bees or of poultry by the alfalfa farmer and the raising of truck by the orchardist. This being true, there are yet some considerations worthy of attention by the pond builder that will at once insure greater success in growing fish, and at the same time not interfere with the chief object for which the pond was built.

Among the considerations may be named the shape of the pond. If it is desired that the fish shall not only increase in size, but shall multiply in number as well, then some provision must be made for the protection of the fry from destruction by the mature fishes. It is also necessary that some provision be made for the spawning of the breeding fish. To accomplish both of these objects, it is necessary that there shall be a considerable expanse of shallow water. The spawners of all varieties of pond fish require a shallow depth of water which will be readily warmed by the sun, and wherein may grow an abundance of plant life in which to deposit their spawn. The carp and other fishes, being vegetable feeders, will need this plant growth for their better sustenance, and it will prove a harbor for the animal life necessary for the carnivorous fishes. In addition, this shallow water will become the nursery for the fry of all varieties, and protect them from the greedy maws of over-affectionate parents or relatives.

In stocking a new pond the variety of fish to be selected is of importance. Until nature can adjust herself to the new conditions created by the building of the pond it is earnestly recommended that German carp only be used. Being vegetable feeders, the carp are more easily fed and cared for until the pond be-

comes self sustaining, and, as they are bottom feeders also, their services as puddlers will be valuable. Also, the fry of the carp make a most excellent food for the black bass, croppie, catfish, and other and better varieties with which it may prove desirable to stock the pond.

German carp may be readily and easily obtained from the Fish Commissioner, from long-established ponds, or from a few of the streams of the State. The better way will probably be to secure them from the owner of a pond where they are breeding. Almost every neighborhood in Eastern Kansas has them, and the writer knows of one place where the ditches along the railroad fairly teem with them.

It will also be necessary that some portions of the pond be made deeper than the bottom of the gates in order that the fish may be retained in the pond when the gates are opened.

A very desirable addition to the appearance of the pond may be made by the judicious planting of water-growing plants in the shallow margins, and of trees and shrubs on the ground outside the embankment. These cost but little, and may be made the source of a very considerable profit in fruit returned, besides their value as shade for the pond.

This is a new era for Western Kansas, and the works of the pond builders shall occupy the sites of those of the Mound Builders, and the wind mill shall accomplish in round measure what the timber culture act failed to do, and the bee, the hen, the cow, and the fish shall be prominent among the agencies which shall assist the resident farmer in his conquest of the "Great American Desert."

### The Hired Man.

C. E. R., of Linden, Ill., in renewing his subscription, writes:—

"I have been reading your paper for about five years, although I am only a hired man, but whenever I change places I am at a loss without it, and always have to order it to follow me. I took great pleasure in reading your recent article in regard to the hired man, and I am in harmony with your way of thinking upon the subject. I think if the hired hand would make more of a study of farming instead of finding fault with everything that is to be done, there would be more good help and better wages maintained through the country. For some reason or other there are so many who miss the key note. They seem to think that nothing is depending upon them. I think also that if more farmers would cultivate politics less, and study your paper more, hard times would not be so keenly felt. It is all right to keep posted, but politics will not make the farmer rich."

There are hired men and hired men, just as there are employers and employers. We are glad to say that we know a good many hired men who make the business of the farm their first care; who are thoughtful, capable, and conscientious in the performance of their duties, and who earn all they get and more. This class of farm help is constantly being drafted upon, however, because those composing it sooner or later become employers. On the other hand, we know hired men who are not worth their salt, whose chief concern seems to be to kill time, who know little about farming, and appear to care less, and who, even though they get low wages, get more than they earn. Similar distinctions run through the class of employing farmers. There are some who would in a year or two turn a good hand into a bad one; there are others who if they have material that is at all promising can make good help out of quite an indifferent hand, and there is a very considerable class who seem to feel as though they had no duties or responsibilities toward their help, and in whose employ, if a good man remains good, it is greatly to his credit, and if a bad one grows worse, a trace of excuse might be found for it. As to what is said upon politics, something depends upon what is meant by politics. We do not find the study of politics in the best sense of the word to be at all a drawback to good farming. It is the privilege and duty of every American citizen to know the history, conditions, and needs of his country in order that he may exercise the privileges of citizenship well and wisely. There is a sense in which the pursuit of politics injures the farmer as it does men in business and the professions generally. A man cannot be a good lawyer, a good doctor, a good merchant, or a good farmer and be a professional politician. No man can serve two masters.—*Live-Stock Indicator.*



### Pictures of Farm Life.

I suppose it would be impossible to find a young man who is about to make his first venture in business, in whatever line it may be; who, if questioned, would not say unhesitatingly he expected to succeed, writes a Delhi (N. Y.) correspondent of the *Country Gentleman*. That very many who venture do not succeed is certain, and it may not be altogether unprofitable to note some of the causes of failure. We learn from statistics that over 90 per cent of those who engage in mercantile pursuits fail sooner or later. I have not at hand data to furnish full reasons why this is so, but from observation I believe one need not look further than two simple ones in most cases, which are these—living beyond one's means, and want of attention to business. As proof of this I cite the absolute certainty with which Italians and other foreigners accumulate wealth who come here with nothing, but with a firm purpose to make money. They accomplish what they undertake because they strictly observe these two rules.

There are various answers to the question "What is success?" Not attempting to enter the misty field of the mercantile world, I leave its consideration for some one better qualified to judge as to the claim it should have on our young men. I once heard it remarked by a clergyman who conducted the burial service of a farmer whose life had always been quiet and unassuming, yet who had not only accumulated a goodly share of this world's goods, but had so lived among his fellow-men as to gain the respect of all, and died with the firm assurance of a home in the land beyond the grave, that "The verdict of those who look upon us in death as to what our lives have been will be true and final." Success or failure will be written over against our names, and the world will remember us for what we were, and not for any profession we may have made. What, then, is successful farming? Perhaps I cannot better answer this man than to give results as I have had opportunity of observing.

The farmer spoken of had two daughters, one of whom married a thrifty young man who came to that home, and he and his wife assumed their share of the burdens and cared for the old people in their declining years. There was one absolute rule from which there was no deviation on this farm, which was—"A thing that is worth doing is worth doing well." With no unnecessary outlay for fine things in the house or on the farm, too good to be used, needed conveniences and even luxuries have been provided, money has been saved and the value of the farm constantly increased because of increased productiveness. While no attempt has been made to overreach some one else, there has been steady advancement, and what has been obtained has been saved. The family has always lived in quiet, and what was said of the father may as truthfully be said of each member of the family. This I call successful farming.

Another picture from real life. A young man began life on a good though not large farm, but, thinking he saw greater opportunities on a larger farm, he sold and bought one containing several hundred acres. Whether the extra duties of the large farm called him or not I will not attempt to say, but much of his time was spent in town. For a while his boys took charge of the farm in his absence; this at length became tiresome, and they, too, found congenial society in town. Crops were neglected, and hay and grain indifferently secured; cattle were neglected or poorly fed, and farm buildings allowed to go to ruin. Until finally the farm passed into other hands. I heard a successful dairyman in the town of Bovina say recently that he believed it would be difficult to name another town where the farmers were so generally found at home every day. The remark made its impression upon me, and it may safely be concluded that if farmers are at home planning and executing their work instead of lounging round town talking politics, as a rule you will find them successful in their calling.

### Why Farmers Fail.

Economy and careful methods appear in many instances to be entirely ignored on farms. When the gross neglect and waste that abound on some farms is taken into consideration it is a source of wonder why real bankruptcy does not follow. Any other occupation thus poorly followed would mean speedy ruin. Mrs. A. C. Maskell, in the *New York Tribune*, has this to say: "The cause of the failure of so many farmers is their wastefulness. Instead of making the most of little things they are constantly grasping after the unattainable. I have seen farms where berries were allowed to dry on the bushes and apples rot on the ground because they were not thought worth gathering, and I have seen others where all the fruit was gathered, even to the last handful, and if there was no market for them they were dried and kept over until prices made it profitable to sell them. Women, especially, can derive quite an income by gathering up fruit as soon as it falls to the ground and canning or drying it."

"Willful waste makes woeful want" is an old proverb which the farmer and his wife want to study more than any thing else, especially the wife, for she is apt to think: "It doesn't make a particle of difference whether I throw this away or not, because there is plenty more," and so things are scattered until a scarcity comes, and then the "willful waste" is seen only when it is too late.

Many a mortgage has been lifted off a farm by being careful in the little things, and many a farm has had to be mortgaged, and finally lost, because of a continual leaking which the manager did not seem careful enough to stop before too late. It seems to me

just like the talents in the Bible. If we are not careful and do not make the most of what God has given us, then even that which we have shall be taken from us and we shall have nothing.

"I think the Germans the most thrifty people on earth. I have seen them settle themselves down in some bushes, with not a foot of tillable ground anywhere, and in less than a year every bush was grubbed up and 'the wilderness was made to blossom like a rose,' the very roots of the bushes being utilized into a rustic inclosure for the tiny farm. In two or three years quite an income was realized from grapes and peaches, to say nothing of the good wife's poultry."

"Of course, all this means much hard work, but what of that? Nobody has a right to be a farmer if he hates work, or if he scorns the day of small things, for every big thing on earth has been made up of small beginnings. The farmer who is careful about little things is sure to reap his reward. Some people scald their poultry because they are plucked more easily, but then there are all the feathers wasted; others not only save feathers, but gather up every waste bit of iron and turn all the old bones, ashes, and every bit of refuse into fertilizers that yield a hundred fold."

### On Which Side do You Stand?

The story of one man's failure and another man's fortune in the same store or on the same farm has been told a thousand times, and will be again so long as time lasts. Why? Because one man is adapted to succeed, and the other is not. The one is a good manager, and the other a poor one. One looks ahead and prepares for contingencies, whilst the other groans over the past and sees no prospect for the future. One is inspired by hope, throws enterprise into his work and his business, carefully watches all the corners, cares for every detail, and goes about his work with a courage and a confidence which bodes no such thing as failure. Another is lacking in confidence, was born a pessimist, handles everything gingerly, much as he would a hot brick, and awaits the providential coming of success with the change of seasons, just as though no effort was required to hew success out of the very jaws of failure.

As farmers we are on the eve of another season's effort. Past seasons have been against us. We have suffered from drought, from floods, from vermin in our fields, and worse enemies in the markets. What shall we now do? Tacitly accept the situation and await the coming of sunshine and rain with good harvests and a rousing demand for our products at higher prices, and expect that that without applying the means necessary to successful enterprise, all will be well or ill without any extra effort on our part? No, indeed. It behooves us to bethink ourselves, to be forehanded, to have everything ready at the proper moment, to put our soil in the best possible condition, to plow deep, to make good seed bed, buy improved seed, thoroughly fertilize the soil and crops, and make up our minds that if success never crowns the efforts of the sluggard and the ne'er do well, it generally does reward the man who, with push, grit, and enterprise, puts himself behind his work and continuously drives it.

Thousands of farmers will this year, no matter what the character of the summer, make poor and indifferent crops; and thousands more will make the farm pay and have a balance to the good ere the snow flies that will gladden their hearts, help pay mortgages or other debts, and warrant them when the fourth Tuesday of November comes in going on their knees in thankfulness and as well patting themselves on the back saying: We did our best, and got there.—*Colman's Rural World*.

### The Farm House—What the World Owes It.

A popular writer says of the farm home. "How much it means, what possibilities it suggests!" Its pleasures are many, and do not fail with time. "Every spring is a new revelation, every summer a fresh, original chapter of existence, and every autumn a fruition of hopes as well as of seeds and buds."

Its privileges are much to be sought after—the quietude which is an important factor in development; the freedom from sights and sound which are distressing and evil.

The farm house is not a place of humdrum, brainless routine. Science offers her aid on every hand, and beauty in numberless forms is ever present. Nature is a good mother. She does not coddle and over-indulge her children, but rewards their love abundantly, invigorates them if they dwell in her presence, and develops mind and muscle, heart and soul, if they obey her laws and seek to know her well. Although infinitely rich, she has not the short-sighted folly of those parents who seek to place everything in the hands of a child without cost. On the contrary, she says "See what you may win, what you may attain." Every crop is a prize to knowledge, skill, and industry. Every flower is a beautiful mystery which may be solved in part; every tree is stored sunshine for the health, shelter from the storm, a thing of beauty while it lives, and of varied use when its life is taken. In animals, birds, insects, and vegetation, we are surrounded by diversified life, and our life grows richer and more beautiful and complete as we enter into their life and comprehend it. The clouds above us are not mere reservoirs of water for prosaic use. In their light, shade, and exquisite coloring they are even a reproach to the blindness of coarse and earthly minds.

Nature does much for the farm home, but she ex-

pects the inmates of the home to guide her and to call to their aid other arts. Adornments should be added as the acres broaden, and the same is true of of conveniences. Water should be as plentiful as the air we breathe and procurable with almost as little exertion. Reading matter and music in the farm home as necessary as the cooking stove.

The tasks of the farm home are arduous and multitudinous, requiring infinite faith, patience, and knowledge. "Aye, these are homesteads which have witnessed deeds that battle fields with all their bannered pomp have little to compare with." "But the end crowns the work."

The world owes the farm home its respect, for it produces a large proportion of the foundation of all trade and replenishes the ranks of the world, and the world in turn should put its production within the reach of the farm home, for they are just as necessary to its welfare as the productions of the farm home are to the world.

"The country is the fountain that contains life." Sociologists tell us that only the agricultural class possesses permanent vitality, from its overflow the city population is formed, displaced, renewed. Any city population if left to itself would die out in four generations. The city is an inland lake fed by constant streams, but with an out let. As are the fountains so will be the stream and lake.

### In Favor of Wide Wagon Tires.

A recent dispatch from Washington states that the Agricultural Department has issued a bulletin compiled by General Roy Stone, special agent in charge of road inquiry, containing information concerning the use of wide tires on wagon wheels. He regards it as of special importance in the maintenance of public highways that the vehicles used on them shall have tires of greater width than are now in general use. Extracts from the State laws respecting the width of tires to be used on vehicles are given, some of which offer a rebate of a portion of the highway tax on wagons with rims or tires not less than three or three and a half inches wide. Ohio makes it unlawful to transport over macadamized, gravel, or stone roads in any vehicle having a tire of less than three inches in width, burden of more than 2,000 pounds. Indiana has a law against hauling on a wet gravel road a load of over 2,000 pounds on a narrow-tired wagon or over 2,500 pounds on a broad-tired wagon. Kentucky makes a distinction in favor of broad-tired wagons in fixing toll rates. The results of experiments with wide tires in various states are also given.

The bulletin, in concluding, prints extracts from the consular reports concerning the width of tires prescribed in various foreign countries. In France, every rating cart is said to be a road-maker. Their tires are from three to ten inches in width, usually from four to six. The German law prescribes that wagons for heavy loads, such as coal, brick, earth, and stone, must have a width of tire at least four inches. Switzerland requires wagons to be provided with wheels having tires of a width proportionate to the largest loads admissible.

### Horses for Profit.

But to return to the matter of sires and dams. There are many horses eating their heads off in Kansas this year that were sired by nothing in particular but damned by everybody in general. Administer a dose of reform here. Begin a little ruthlessly, as the custom is. Weed out every undersized, blemished, or inferior animal and dispose of it. You probably won't get very rich from the proceeds, but it will, nevertheless, be a sagacious business transaction fraught with good and lasting results. While the reform movement is on, don't spare some scrubby old mare because she raises a colt every year. Every colt she raises will run you in debt. Ordinarily these measures of reform would seem unnecessarily rigorous, but the exigencies fully demand them, and the conditions are ripe for them. There will never be a more advantageous opportunity to replace cheap, inferior animals with good ones than the present time affords.

Lastly, fix an ideal and keep it ever in view. Whether you are an admirer of trotting horses, or coach horses, or draft horses, do not mix them up with the hope of getting a general-purpose horse. Life is too short for ordinary horse breeders to establish any more types of horses, and our posterity may take to the poultry business.—*From a paper by H. W. Avery, before the Improved Stock-Breeders' Association.*

Cultivation is a powerful factor in setting free plant-food. It increases the solubility of plant-food by crumbling, rearranges the particles of soil, breaks them up so that no two of them are in the same position that they were before the tillage, and the particles present more surfaces for the roots to act upon with their living chemistry. Cultivation when properly done also hastens putrefaction and thus helps to prepare for use the important and expensive element of nitrogen so essential to plant growth.—*Prof. I. P. Roberts.*

The science of agriculture is in a great degree founded on experience. It is therefore of consequence that every farmer should know what has been done and what is doing by others engaged in the same occupation, and that he should impart to others the fruits of his own experiments and observations. So said the *New England Farmer* in its first issue, away back in 1882; and the same great truth still holds. The men who discount the science of farming disparage their own practical experience.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Mrs. Graham spent Wednesday and Thursday in Topeka.

Prof. and Mrs. White are made glad by the birth of a son on Saturday last.

George Dean was in classes Friday after several days illness with tonsillitis.

Pres. Fairchild made a flying visit to Abilene yesterday on College land business.

The Library has received 105 volumes of newly covered books from the State Bindery.

Prof. Olin attended the annual meeting of the Academy of Languages at Emporia, this week.

Olive Wilson and Mabel Selby have been kept from classes all the week by the still persistent mumps.

Hon. T. P. Moore, Regent of the College from 1885 to 1893, spent a few hours on the grounds Wednesday.

Cora Stump, Fourth-year, appeared in classes Wednesday after a triumphant struggle with the mumps.

Mrs. E. M. Walsh of Blue Springs, Neb., visited us this week for the purpose of placing her daughter in school.

The contract for printing the bulletins of the Experiment Station has been awarded to the Manhattan Mercury.

The College telephone line will be connected with the Manhattan plant soon to be put in by Messrs. Wareham and Wood.

The American Swedenborg Printing and Publishing Association of New York donates thirteen cloth-bound volumes of Swedenborg's publications to the Library.

Mr. Overton, senior member of the Overton and Lee Electric Construction Co., of Topeka, called at the College Monday. He has charge of the erection of the city telephone line.

Prof. Hood suffers from contact with poison ivy, the virus having entered his blood and made its appearance at various places on his body, as well as on face and hands, bandages being necessary on the latter.

C. V. Holsinger, Fourth-year, enjoyed a visit on Saturday last from his mother and brother. The latter has just returned from the scene of the late Japan-China war, being a Cadet on the U. S. ship *Baltimore*.

Lieut. Morrison, Professor of Military Science and Tactics at the College from 1887 to 1890, now stationed at Fort Leavenworth, is Post Quartermaster. He expects to visit the College before or during Commencement.

Messrs. Elliot & Garrettson, our local clothiers, were awarded the contract for the 200 Cadet uniforms, to measure. The uniform is to consist of blue blouse and cap and grey trousers. The contract requires the delivery of the suits by May 20th.

The Domestic Department, in the absence of sufficient milk for all the large classes in dairying, continues the dinners and lunches, to the gratification of the hungry multitudes that gather daily as the odors from various savory dishes rise and spread through the halls.

Prof. Will has moved to "Sunny Slope," better known as the Stingley place, northeast of the College, where he will have the benefit of a considerable garden "patch," in the cultivation of which he will have opportunity to demonstrate the advantages of a college athletic training.

The College ball club met the Mannhattans on the diamond yesterday afternoon in a closely contested game, being defeated by a score of 8 to 9. Some of the College team proper play with the Mannhattans, but by a few changes our club could be strengthened greatly by material yet available.

The two-foot tiling in which the steam-pipes to the Armory are to be enclosed has arrived and will be put to its intended use as soon as the excavation is completed. The "ditch gang" is now at work on the drain from the boiler house southwest through the sorghum plats to the pasture ditch.

The public exercises Friday were opened by a selection from the orchestra, after which a division of the Third-year Class appeared with orations as follows: "Need of Industrial Schools," H. J. Robison; "The New Era," T. M. Robertson; "Springtime, A Prophecy," Minnie Pincomb; "Pride," A. Smith; "An Artist," Mary E. Ridenour; "Earnings and Wages," H. N. Rhodes; "Whatever Is Is," L. W. Pursell; "America and the Thermometer," Edith Lantz; "Caucasian and Moor," C. F. Doane; "Progress

viewed from the Past, Present, and Future," Fannie Parkinson; "Optimism and Pessimism," W. O. Peterson. A duet by Misses Helder and Leicester added much to the program.

J. B. and Hortensia Harman enjoyed a visit Sunday from their brother Colfax Harman, editor of the Valley Falls *Vindicator*. Mr. Harman as an editor off duty was taking a short bicycle tour.

Unusually interesting exercises were opened by the Cadet band, yesterday afternoon. The following orations were delivered: "Forces—Physical and Psychical," O. A. Otten; "A Well-Dressed Woman," Maud Kennett; "Our Standing Army," W. H. Painter; "Dreams," Ethel Patten; "Museums and the Student," C. W. Pape; "A Misjudged Life," J. V. Patten; "Death," Alice Quintard; "A Defense of Secret Societies," W. H. Phipps. A piano solo, "Heather Bells," by Nellie McDonald, '91, was a pleasing interlude.

Senator Brown of Garden City, accompanied by his old-time friend Jos. Dillion of Lawrence, representing the Kansas City *Times*, spent several hours at College Wednesday afternoon, and made the "grand circuit" with College guides. Senator Brown saw enough of the institution in the two hours spent here to convince him that the time he gave to the College interests in the Senate last winter was well spent. He favored the appropriation for a Domestic Science building, and inspection of the cramped quarters caused him to regret more than ever that the bill did not pass. On Friday morning Senator Brown visited College again and addressed the students in chapel, emphasizing the necessity for each doing something to upbuild the institution.

## GRADUATES AND FORMER STUDENTS.

Geo. Munger, greeted old friends about the halls last Wednesday.

Truman Allen, Third-year in 1892-3, was seen about town last week.

Lillian Oldham, Second-year in 1892-3, spent Easter with Secretary Graham's family.

Lottie Henry, student in 1893-4, visited College on Tuesday. She is at home in Lincoln.

Minnie Reed, '86, plans to visit California this summer after her school in Argentine closes.

Ruth Stokes, '92, is elected President of the Manhattan Epworth League for the ensuing year.

A. H. Greeley, Third-year in 1888-9, assumes the responsibilities of father to a young California girl.

Rev. E. M. Paddleford, '89, attended chapel exercises Tuesday morning. He is located at Rossville this year.

Archie Campbell, Second-year in 1891-2, was married, April 10th, to Miss Serena K. VanHook, of Topeka. Horton will be home for the young folks after June 2nd.

E. C. Parker, Second-year in 1887-8, in the mercantile business for several months past at Plattsburg, Mo., was burned out in the big fire last week. His loss is almost covered by insurance.

C. H. Thompson, '93, has been promoted to the position of Botanical Assistant at the Missouri Botanical Garden, St. Louis, Mo. He has been for the last two years assistant at the Shaw School of Botany, a department of Washington University. His new work will greatly increase his opportunities for growth, besides bringing increased salary. To a long letter he adds a word of testimony: "The training I received in College changed my whole life, and what I am now, and all that I hope to be in the future, I attribute to my Alma Mater."

## COLLEGE ORGANIZATIONS.

April 13th.

President Johnson called the Society to order at eight o'clock, sharp. Roll-call, prayer, reading of the minutes. Next came the inauguration of the newly elected officers, the names of which were printed in last week's *INDUSTRIALIST*. President Painter took the chair amid enthusiastic applause. Ex-President Johnson responded to a call of valedictory, and in a few well-chosen remarks thanked the Society most heartily for the honor and support they had tendered him during the past term, and closed by wishing the Society much future progress. President Painter followed with a brief but pleasing inaugural. Under balloting on candidates, L. W. Wolfe and S. K. Brewer were made members of the Society. The program was opened with an oration by Samuel Adams entitled, "The Future Success of the Hamilton Society." In fluent terms Mr. Adams reviewed this year's work, pointed out wherein we have advanced, with touches of humor here and there he soon captivated the audience, and closed with an eloquent appeal to the freshman and sophomores to put their shoulder to the work and make the Hamilton Society better for their being members of it. The Secretary was instructed to record a copy of this oration in the minutes. Wm. Poole read a very humorous selection on a heating stove "The Fearfully and Wonderfully made." The debate upon the question, whether our institution is up with the times, was affirmed by C. E. Pincomb. Some of his points were, we have no athletics, no suitable amusements, no contests. These features, he said, would make better, more enthusiastic, more patriotic students. C. F. Doane took up the negative, ably rebutting the arguments of the affirmative, and introducing argument to show that

the course here pursued is the one which the more advanced eastern colleges are beginning to follow. A. W. Staver continued the affirmative, adding several points respecting restrictions here. C. W. Nelson emphasized the argument of his leader. The Society decided in favor of the affirmative. Under proposition for membership the name of F. D. Waters was proposed. Unfinished business called forth reports from several committees, one of which is procuring a better picture of Hamilton. Nothing important came up under new business. J. W. H.

April 12th.

The Ionian Society was called to order at the usual hour by President Patten. Gertrude Stump led in devotion. After roll-call the new officers were installed. In a few well-chosen words the outgoing President, Ethel Patten, thanked the girls for their well wishes in the past, while President Day in her inaugural bespoke these for the future. Flora Allingham was initiated. After a declamation by Inez Holroyd, Rena Helder entertained us with a piano solo, rendered in her usual pleasing manner. The discussion was postponed one week. Louise Spohr's oration on "Nature," showed that she was well acquainted with nature in all her moods. This was followed by a solo with guitar accompaniment, by Mabel Cotton. The Society showed its appreciation of this by a hearty encore, to which she responded. The Oracle was presented by Etta Smith, with the motto, "Not for Ourselves Alone," and discussed among other things, "The Masked Party and Ag. Supper," "A visit with Karl Haufman," and "Reserved Seats." After the report of critic, and reading of the minutes, the Society adjourned. W. H.

April 12th.

The Alpha Beta Society was called to order by Pres. Norton to listen to a piano duet rendered in the best manner by two Ionians, Misses Helder and Leicester. Miss Inez Palmer led in devotion. Miss Jennie Smith, '94, and Mr. E. P. Smith entertained the Society with a vocal duet, "O Morning Land," Miss Secrest accompanying on the piano. A declamation, "The King's Seat," Miss Thackrey recited in a pleasing and forcible way. "Making Butter at the K. S. A. C.," comparing the making of butter to the building of character for life while in college, was the subject of an essay well-written and delivered with credit to its author, Miss Bertha Ingman. The door now opened, and Miss Painter, disguised as an "Irish bridget," just from household cares, with disfigured face, stepped in and told of her troubles and trials with an unloving husband. The question, "Resolved, that political subjects should not be discussed in the pulpit," was ably argued on the affirmative by J. B. S. Norton and Adelaide Wilder; Hattie Paddleford and Ada Ingman on the negative. The affirmative argued that in order to keep the church united in its work, political subjects should not be introduced, for this would cause strife and disunion; the thing to do is to bring religion into politics, and not politics into religion. The negative argued that the minister should be one to help lift up the world to a higher standard; that all city reform were mainly brought about through the ministry; therefore to do the level of common life and discuss there vital question which so influence the welfare of the nation. Mary Paddleford, as editor, read one of the most interesting editions of the *Gleaner*. Something out of the usual line, in the form of a dramatic entertainment, was given by R. W. Rader and Mr. Amphlett, which kept the audience in smiles at the ridiculous features it contained. A piano and violin duet by Mary Gilkerson and Geo. Fryhofer was well rendered. Geo. L. Clothier, '91, entertained the Society with a vocal solo, and responded to a hearty encore, but this time singing in a foreign language. Under extemporaneous speaking, J. C. Christensen, '94, gave the Society a few words of welcome and cheer. Usual business and adjournment. M. A. L.

## General Duties and Privileges.

General good conduct, such as becomes men and women anywhere, is expected of all. Every student is encouraged in the formation of sound character, by both precept and example, and expected, "upon honor," to maintain a good repute. Failure to do so is met with prompt dismissal. No other rules of personal conduct are announced.

Classes are in session every week day except Saturday, and no student may be absent without excuse. Unexcused absences are taken into account in calculating grades. Students enrolled in any term cannot honorably leave the College before the close of the term, unless excused beforehand by the Faculty. A full and permanent record of attendance and scholarship shows to each student his standing in the College.

Chapel exercises occupy 15 minutes before the meeting of classes each morning, and unnecessary absence from them is noted. On Sunday no services are held in the chapel, but students are urged to attend the different churches of the city.

Every Friday, at 1:30 p. m., the whole body of students gather for a lecture from some member of the Faculty, or for the rhetorical exercises of the Third- and Fourth-year Classes. Once a week all the classes meet, in their class rooms, for exercises in elocution and correct expression.

There are four prosperous literary societies which meet weekly in rooms set apart for their use. The *Alpha Beta*, open to both sexes, and the *Ionian*, for ladies, meet Friday afternoon. The *Webster* and the *Hamilton* admit to membership gentlemen only, and meet on Saturday evening.

The Scientific Club, composed of members of the Faculty and students, meets in the Chemical Laboratory on the second and fourth Friday evenings of each month.

Branches of the College Y. M. C. A. and Y. W. C. A. hold weekly meetings at the College, and a union meeting on the first Friday evening of each month.

Once in each term the College Hall is opened for a social gathering of Faculty and students, in which music, literary exercises, and friendly greetings find place.

Public lectures by prominent men of the State are provided from time to time, as opportunity offers. All are free.



## Means of Illustration.

**Agriculture.**—One hundred and eighty-five acres of land used for farm purposes, with hundreds of plots under experiment in grain, grasses, and forage crops; and illustrating various methods of culture and rotation.

A barn 50x75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 43x96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with power, and equipped with improved machinery for shelling, threshing, cutting for the silo, and steaming.

Two piggeries—one of ten pens, for experimental uses, and one of six pens, with separate yards for general purposes.

An implement house, 22x50 feet, of two stories, and corn cribs. Shorthorn, Aberdeen-Angus, Hereford, Holstein-Friesian cattle; Berkshire and Poland-China swine; and Shropshire sheep. Farm implements of improved patterns.

Collections of grains, grasses, and forage plants.

Buildings, stock, and equipments are valued at \$26,000.

**Horticulture and Entomology.**—Orchards containing one hundred varieties of apples, thirty of peaches, thirty of pears, twenty of plums, thirty of cherries, and five of apricots.

Small-fruit gardens, with two hundred varieties of small fruits, including blackberries, raspberries, gooseberries, currants, and strawberries, and vineyard, with one hundred and sixty varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties, of from one to twenty-five years' growth.

Ornamental grounds, set with a variety of evergreens and deciduous trees. Sample rows, containing about one hundred and fifty varieties of ornamental and useful shrubs and trees, labeled.

Vegetable garden, with hot-beds and cold-frames, and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

Two well-planned and furnished greenhouses of three rooms each, stocked with a collection of native and exotic plants.

Museum, containing a collection of woods from American forests, and a large series of specimens in economic and general entomology.

Value of property, exclusive of orchards and grounds, \$16,000.

**Chemistry and Mineralogy.**—Eight rooms fitted with tables and apparatus for a class of eighty students in qualitative analysis, eight in quantitative analysis, including necessary facilities for assaying, with a mineralogical collection and general illustrative apparatus. Value, exclusive of building, \$8,200.

**Geology, Zoology, and Veterinary Science.**—A general museum, well fitted with cases containing valuable collections of mounted Kansas mammals and birds, with mounted skeletons of wild and domestic animals. The largest collection of Kansas fishes and mollusks in the State. Kansas reptiles and batrachians, salt-water fishes and invertebrates, in alcohol. Collections of mound-builders' and Indian relics. Kansas fossils and rocks, typical of the geological ages found in the State.

In veterinary science: A laboratory fitted with apparatus and re-agents, for the study of disease. A collection of charts, models, and anatomical preparations, illustrating healthy and diseased structure. Value, including general museum, \$7,500.

**Botany.**—A general herbarium, consisting of a large collection of plants of the United States and other countries; a Kansas herbarium, containing specimens illustrating the distribution and variation of plants throughout the State; also twenty-eight compound microscopes, four dissecting microscopes, tools, re-agents, etc. Valued at \$3,750.

**Drawing.**—Models, plaster casts, patterns, charts, easels, and implements. The class room is provided with top light, and furnished with twenty-four new Dietzgen patent drawing tables. An adjacent room is fitted up with running water, coating table, rub light, etc., for blue and black printing. Valued at \$2,000.

**Physics.**—Complete physical apparatus, for general instruction in physics, and meteorological instruments, including a self-recording anemometer. Among the apparatus for special work may be mentioned Coulomb's torsion balance, Kohlrausch differential galvanometer with reading telescope, Deprez-Carpenter ammeter, Ayton and Perry's voltmeter, Thompson's potential and current galvanometers, Carhart-Clark standard cell, standard legal ohm, Wheatstone's meter bridge, Edelman dynamo. The value of the whole is \$4,000.

**Mathematics and Surveying.**—Transits, plane table, compasses, levels, chains, models, etc. Valued at \$1,300.

**Mechanics and Engineering.**—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, frier, boring machine, grinder, and general chest of tools for fine work.

Shops for iron work contain blacksmith forges to accommodate at least sixteen; brass foundry of twelve benches and large furnace for brass; iron foundry, with two-ton cupola; machine shop equipped for thirty students, including, besides hand tools, lathes, drills, planer, etc.

Inventory of material and apparatus in both shops, \$14,000.

**Kitchen Laboratory,** with ranges, cooking utensils, dining-room furnishings, dairy furniture. Valued at \$800.

**Printing Office,** with thirty pairs of cases; large fonts of 6-point, 8-point, 10-point, and 11-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press, a new Liberty quarto-medium job press, a Gordon eighth-medium job press; a mitering machine, a rule-curving machine, and a paper cutter. Value of equipment, \$4,300.

**Sewing Rooms,** with eight machines, models, patterns, and cases; worth \$700.

**Music Rooms,** with five pianos, four organs, other instruments, and nine charts; valued at \$1,800.

**Armory,** containing one hundred and fifty stands of arms (breach-loading cadet rifles, caliber .45), with accouterments; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$1,000.

## Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

## Terms of Admission.

Applicants for admission at the beginning of the College year must be at least 14 years of age, and able to pass a satisfactory examination in reading, spelling, writing, arithmetic, geography, English grammar, and United States history. Those applying later in the year must show sufficient advancement to enter the classes already in progress. Every effort should be made to begin with the first day of a term, in order to advance with the class from the first.

The following diplomas and certificates will be received in lieu of entrance examinations:—

1st. Diplomas received on the completion of a county course of study which has been approved by the Faculty, when properly signed by the county superintendent.

2nd. Certificates of passing the grammar grade in any city school with a course of study approved by the Faculty, when properly signed by the city superintendent.

3rd. Kansas teachers' certificates issued by the county board of examiners, showing that the above-named studies have been passed with a grade of at least 70 per cent.

The Faculty have approved the course of study adopted by the following counties and cities; others may be submitted for approval at any time:—

COUNTIES.			
Allen,	Elk,	Linn,	Reno,
Anderson,	Ellis,	Marshall,	Rice,
Barber,	Ford,	Marion,	Riley,
Brown,	Geary,	McPherson,	Rooks,
Bourbon,	Greenwood,	Miami,	Rush,
Butler,	Harper,	Mitchell,	Russell,
Chase,	Harvey,	Montgomery,	Saline,
Cherokee,	Jackson,	Nemaha,	Shawnee,
Clay,	Jefferson,	Neosho,	Sumner,
Cloud,	Jewell,	Osage,	Wabaunsee,
Cowley,	Johnson,	Osborne,	Washington,
Dickinson,	Kingman,	Ottawa,	Wilson,
Doniphan,	Labette,	Pottawatomie,	Woodson,
Douglas,	Leavenworth,	Republic,	Wyandotte.
CITIES.			
Abilene,	Concordia,	Kanapolis,	Oswego,
Anthony,	El Dorado,	Kansas City,	Ottawa,
Arkansas City,	Emporia,	Kingman,	Paola,
Atchison,	Eureka,	Larned,	Parsons,
Augusta,	Fort Scott,	Lawrence,	Pomona,
Beloit,	Fredonia,	Leavenworth,	Russell,
Burlington,	Gaylord,	Lyons,	Salina,
Caldwell,	Girard,	Manhattan,	Seneca,
Chanute,	Great Bend,	Mankato,	Solomon City,
Cherryvale,	Hiawatha,	McPherson,	Topeka,
Chetopa,	Holton,	Minneapolis,	Washington,
Clay Center,	Horton,	Newton,	Wellington,
Clifton,	Hutchinson,	Olathe,	Winfield,
Coffeyville,	Independence,	Osage City,	Wichita.
Columbus,	Junction City,	Osborne,	

Applicants over 18 years of age, who, for lack of advantages, are unable to pass full examination, may be received on special conditions.

Applicants for advanced standing in the course must pass examination in all the previous studies of the class to be entered; but, if they have pursued such studies in other institutions of similar rank, they may receive credit for their standing in those institutions, upon presenting a certificate from the proper officer, showing that their course has been equivalent to that given here.

## Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

## Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

## MANHATTAN ADVERTISEMENTS.

## BOOKS AND STATIONERY.

**FOX'S BOOK STORE.**—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

**R. E. LOFINCK** deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

**VARNEY'S BOOK-STORE.**—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

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**D. C. P. BLACHLY,** Dentist. The famed Odontunder used for painless extracting.

## PHOTOGRAPHS.

**DEWEY,** the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

## MEAT MARKET.

**SCHULTZ BROS.** offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

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**6 BATHS,** \$1.00 cash. 12 shaves, \$1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

## GENERAL MERCHANDISE.

**THE SPOT CASH STORE** is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

**E. B. PURCELL,** corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

## PHYSICIANS.

**INFIRMARY** for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. **SOLOMON D. ROSS, M. D.,** 523, 525, 527 P'tz Av.

## A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address **O. P. HOOD, Supt.,** Manhattan, Kan.



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#### WEALTH PRODUCERS.

BY PROF. THOS. E. WILL.

A COLLEGE of the class to which this belongs is designed primarily to prepare young people for the work of wealth production. It should, therefore, be worth our while to inquire what we are to understand by the term "wealth-producer;" to be able to recognize such a functionary when we see him; and, in choosing a calling for life, to make sure that it is the calling of a producer, and not that of one who lives merely to consume the fruits of others' toil.

But we must first know the meaning of the familiar word, wealth. What is wealth? We all think we know; do we? As commonly used in the market place, wealth is everything that can be bought and sold and everything that can be used in buying and selling. The first half of the definition includes therefore, all forms of ordinary merchandise, live-stock, farm-produce, land, and even slaves—when they are still chattels; and the second half includes money, hard or soft, and all forms of good commercial paper. The man who aids in producing any of these things is regarded as a wealth-producer; and he who possesses a large stock of any or all of them is held to be a wealthy man. Others, again, regard human labor applied to land as the grand source of all wealth, and call all labor-products wealth, whatever value man may attach to them, or whatever use he may make of them, or however he may abuse them.

John Ruskin, the art aritic—with the artist's fine sensibility and love for truth—was one of the first to call in question economic conceptions that pass as axioms on the street and in orthodox economic literature. His ideas of wealth and value and the real end of industrial activity may be found scattered through his works on art; but his two little books, "Unto This Last" and "Munera Pulveris," are devoted to the discussion of these and related questions; and will well repay careful study on the part of one who appreciates the value of a right point of view.

The word wealth, Ruskin reminds us, is from the same root as the words weal and well; and from these come such words as welfare and well-being. Wealth, then, rightly considered, is that which contributes to well-being, individual and social; it is that which it is well for an individual or for an entire society to have and enjoy; it is that whose individual or social possession and use hurts no one, but helps all who come within the range of its influence.

Man, we must remember, is many-sided; his physical body requires nourishment and shelter; his mind demands development and training; the social, æsthetic, ethical, and religious elements in his character all, too, need to be called forth and rounded out before the man can be in the fullest sense a man. The agencies that contribute to this unfoldment and culture and genuine man-making certainly make for well-being, and hence become wealth; while whatever makes against true manhood and general welfare, however great may be its cost, cannot, save by wresting words from their real significance, be placed in the wealth category.

While the term wealth as is thus defined, and including, as it does, things material and immaterial—things produced by man and things furnished man free by the bounteous hand of nature, may seem broad—and while the grand division may need to be sub-classified into natural wealth, produced wealth, and the like; it will, at the same time, be found too narrow to include many things that commonly pass as wealth. Some, critically viewed, will be found as worthless as the gew-gaws and trinkets of the savage; while still others we may find to be so perverted from their right use or so constituted by nature that, though they may command a good or even a high price in the market, they represent not wealth to individuals and to society, but are a source of positive detriment; and hence become what the great art critic has termed "illth." Other things, again, that we may not regard worth accepting as a gift, or that, in fact, we may destroy as a source of evil, may be found, in fact, to deserve a place among the highest forms of wealth. In what sense does the miser's gold, for example, contribute to his own well-being or that of any one else? A few winters ago two greedy brothers, according to a newspaper account, were found one cold day in their bed, frozen to death; while all around their house were stacked hundreds of cords of wood which these men owned, but were too stingy to burn. In addition to the wood, they owned large property; but, to save

fuel, they had spent whole days in bed, and, at last, succumbed to the frost, victims of their own greed. Query—While in their possession, was the cord-wood wealth to the brothers or to any one else? Can such men, by any right use of language, be termed wealthy? If so, in what does their wealth consist when they perish of want? Does the fact that cordwood is a labor product and commands a market price make it wealth, either to those who on the one hand are debarred by cupidity, or to those who, on the other, are restrained by law from using it?

A pistol, again, must be produced by labor, if at all; it may sell, too, at a good rate; the same is true of a lot of gunpowder, of a barrel of whisky, and of a bad book. When the first is used to strike down a president, the second, to blow up a parliament, and the third and fourth, to demoralize an entire community, does the source of any one of these in labor and the fact that it costs money make it wealth? If so, to whom? If we hold that the thing is wealth to him who is enabled by its means to serve his private ends in working against true welfare, we raise the question whether any one can really prosper and attain well-being at the expense of others; or whether his apparent gain is not loss to him as well as to his victims.

Human ignorance, again, while leading us to classify as wealth the liquor and tobacco, the obscene books and pictures, and the low theatricals that destroy instead of building up genuine manhood; or the paltry bones of contention over which whole nations, at frightful cost, may engage in war; or the needless warships that consume a peaceful nation's revenue and breed in it the fighting spirit—the same ignorance and short-sightedness may lead us to overlook some of the most obvious and helpful forms of wealth. Many a man, it has been well said, has been buried beside the plant that might have saved his life. Professor Patten has clearly brought out what American farmers are slowly discovering; viz., that we may apply infinite labor to the production of comparatively unremunerative crops when less labor applied to the production of other things would yield a rich reward. The choicest works of ancient art were to the Vandals in Rome as pearls before swine. Some of the most precious manuscripts of antiquity were thrown carelessly about the mediæval monasteries, or scraped bare by ignorant monks that the tiresome annals of their monotonous lives might be scribbled upon them. "Paradise Lost," one of the three great epics of all time, sold in an unappreciative age for a trifle, and elicited the criticism, "Un- less length be a merit, it hath no other." Similarly our future historian, we may well believe, will point out how a people, intoxicated with its material triumphs, has trampled into the mire its highest works of genius; despised the wealth that might have availed most truly for its life, and mistaken the shadow for the substance.

If, now, we can appreciate that wealth, regardless of the amount of labor devoted to its production, or of the price it can command in the market place, is the thing that makes for weal, we should encounter little difficulty in recognizing the wealth-producer as he who contributes, however humbly and however indirectly, to the sum-total of human well-being. Not what is his salary, nor how exalted is his position, and how great is his fame, should be our inquiry; but, what good does he do? How much do we need him? How greatly would he be missed were he taken away? Would we gain or lose by his absence? Measured by this standard, we can see that not necessarily he who brings money into the country as the mercantilists thought; not simply he who tills the soil and exploits the mines and thus commends himself to the physiocrat; not simply he who on farm, or in shop, or factory, or on the seas, aids in bringing to our land material things, good or bad, that we may wisely or foolishly desire, and thus meets the requirements of Adam Smith and his school; nor even he who performs services, material or immaterial, that society in its wisdom or folly is willing to pay for—thus, in the minds of some leading present-day economists, enrolling himself among the producing classes—not these simply or necessarily are wealth-producers; but all, appreciated or despised, arrayed in purple or in rags, laurel-crowned or crowned with thorns, who work well with hand or head or higher faculty in supplying the normal wants of man; in making life better worth the living; in lifting the race from the plane of animalism and aiding it to realize its high destiny. These are the wealth-producers, and to their number we must belong unless



we would play the part of drones in the hive, or parasites upon the body politic.

#### CHEMICAL NOTES ON POPULAR TOPICS. IV.

BY PROF. J. T. WILLARD.

THE most surprising discovery of recent times is that of the new constituent of the air. When we consider that chemists have busied themselves more or less for over a hundred years in analyzing air, it seems almost humiliating that a constituent present to the extent of nearly, or quite, one per cent should have so long remained undiscovered. This is a superficial view, however, for when we consider the properties of the new substance, and the remarkable series of observations that led to its isolation, our humiliation is displaced by admiration of the sensibility of the instruments and methods of modern research. Lord Rayleigh was not looking for a new element; he has been engaged for a number of years in determinations of the specific gravity of the elementary gases; that is, in weighing equal volumes of the carefully purified gases in a glass globe. As a check upon possible errors due to impurities, he has prepared the gases experimented on by several distinct methods. After completing a masterly series of concordant results upon oxygen and hydrogen, he took up nitrogen, and found that this gas as obtained from the air was slightly heavier than that obtained from nitrogen compounds. It took several months of laborious research by himself and Prof. Ramsay before they felt confident in announcing the isolation of a new element which they call argon. The details of this work cannot be touched upon here. Its chief difficulty lay in that property of argon which has so long caused us to think it nitrogen, viz., its little capacity for combination with other elements. When Rayleigh and Ramsay announced their discovery, they had failed in all attempts to form compounds of argon. Nitrogen forms compounds with great difficulty, and this resemblance of the two substances has been the reason that hitherto they have been measured together as nitrogen in the air.

As to the nature of argon, its discoverers regard it as a new element, or a mixture of two or three elements. Some chemists disagree with them, thinking that it is a peculiar form of nitrogen, as ozone is of oxygen, and red phosphorus of ordinary phosphorus, but the weight of evidence seems to be in favor of the view that it is elementary in nature. As there are people who can take no satisfaction in a discovery unless some use for it can be given, it may at once be confessed that argon is not likely to be on the market for any so called practical purpose, but it is already advertised in tubes for exhibition of its spectrum.

Since the presentation of Rayleigh and Ramsay's paper, they have sent some argon to the great French chemist, Berthelot, who, by means of the silent electric discharge has caused it to combine with benzene. In this it resembles nitrogen, and the compound it forms is similar to that of nitrogen obtained in the same way. Thus far he has not obtained it in sufficient quantity for exact examination.

Ramsay has made a number of experiments to see if organic tissues contain argon, but thus far none has been found in them.

Since the discovery of argon, Prof. Ramsay has been looking for natural compounds of the element, and in that connection has examined a rare mineral called cleveite which has been said to contain a certain percentage of nitrogen. He finds that the gas obtained shows the argon spectrum strongly, except a few lines, and in addition shows a brilliant yellow line which has not hitherto been observed in the spectrum of any terrestrial substance. This fact acquires intense interest when we learn that the yellow line exactly corresponds with a bright line in the spectrum of the sun's protuberances which has been attributed to an unknown element referred to as helium. The discovery of helium cannot rank with argon, since it was accidental, while argon was the reward of months of acute research; nevertheless many a chemist would be willing to rest his claim to future remembrance on one such discovery.

The liquefaction of hydrogen has been the goal toward which several investigators have striven in the past without definite success. A mere mist upon suddenly releasing the gas from great pressure has been all that could be seen. Prof. Olzewski has recently completely liquefied it. Its critical point is  $-233^{\circ}\text{C}$ . and its boiling point at atmospheric pressure is  $-243^{\circ}\text{C}$ ., equal to  $-405^{\circ}\text{Fahr}$ . This is probably the lowest temperature ever reached by experiment, being within thirty degrees centigrade of the absolute zero. Some idea of this frigid temperature may be obtained by recalling that the boiling point of hydrogen is farther below the freezing point of

water than the melting point of tin is above that constant.

All of what used to be called the permanent gases, including hydrogen, oxygen, nitrogen, carbon monoxide, nitric oxide, marsh gas, and argon have now been liquefied, and all but hydrogen and oxygen have been solidified.

#### FROZEN DAINTIES.

BY MRS. NELLIE S. KEDZIE.

FOR those who have ice within reach for use during the summer there is a wide range of delicious foods which are inexpensive, refreshing, and healthful. The use of ice creams, ices, and sherbets, to say nothing of frappes, frozen custards, and puddings, is growing with people who live where there is much summer weather; and the housekeeper realizes that the cheapest good desserts at her command come from the freezer. Farmer people find ice is not an expensive luxury, for it may be put up during the winter, when work is not pressing, and when time doesn't seem very valuable. Many of the farm homes of Kansas have ice all summer; and while the outlay in the winter is small, the saving in summer is great because of added comfort and pleasure, as well as lessening of work.

There is little thought of having ice cream without the use of eggs, but if real cream can be used in the proportion of one part good cream to two parts milk, with sugar and flavoring, the ice cream will be found more digestible than if made with eggs. A base of flour thoroughly cooked in milk, one tablespoon of flour to a gallon of ice cream, or a tablespoon of gelatin to a gallon freezer of cream, will give body to the cream. If eggs are used, a good cooked custard gives the best way to introduce the eggs to the ice cream.

Unless good ice cream can be produced, the safer way for the cook's reputation is to make ices and sherbets, for they can be made in great variety and of very delicious quality. Perhaps the simplest is the milk sherbet, which is milk and sugar, one quart to one cup, frozen. When beginning to stiffen, the juice of two lemons dropped into the freezer and the whole mass beaten well, will give a most delicious dish.

Any fruit—as oranges, lemons, pineapples, raspberries—makes good ice. Simply make a good drink, leaving in what pulp can be separated from the seeds, and freeze. The addition of a little gelatin gives body to the ice, and keeps it from melting too rapidly. The beaten whites of eggs dropped in just before the mass is thoroughly frozen gives lightness, and increases the quantity of material.

An ice is usually fruit juice and water, frozen until stiff. A sherbet is only an ice which has gelatin, cream, or beaten whites of eggs added. Ices are usually served in glasses, but sherbets are served as ice cream.

The freezing mixture is salt and ice in the proportion of about one part salt to three or four of ice. Rock salt is best, and the salt and ice should be pounded into small pieces. If too much salt be used, the mixture is liable to freeze too rapidly, and not being beaten enough to be coarse in grain. This must be carefully avoided in order to have good smooth ice cream. Sometimes whipping the cream before adding it to the milk will give a "velvety" smoothness very desirable in ice cream.

The water which accumulates in the tub about the can should not be drained off until there be danger of its getting into the cream, as the presence of the water hastens the freezing. For packing after the cream is frozen, larger pieces of ice and salt may be used, and if the cream must stand many hours, the water may be drawn off, and new freezing mixture be added. All creams are better if "ripened" a few hours before using.

In cases of severe illness, when the digestion is affected, a diet of ice cream is often found beneficial. If properly made, it may be an excellent food. In any case where cold milk or cream is prescribed for diet, or where ice is used, the freezing of the cream with the addition of little or no flavoring and what sugar may be safely used gives the invalid a tempting food which is nourishing as well as palatable.

The brick-ice cream, so readily served and so pleasing in appearance, is easily made. Two or three kinds of cream, sherbet, or ice are made in separate freezers. This is packed in layers in tin cases, carefully tied up in paper and packed in ice and salt. Well-made ice cream, ice, or sherbet is a good food for almost all people.

The cake which is often eaten with the frozen food is more frequently the cause of indigestion than is the iced food itself. Eaten in daytime and in moderate quantities, all the products of the freezer

will be found digestible for most people.

The fact that a frozen dessert is easily made and can be prepared several hours before needed for use, makes it the friend of the woman who does all her own cooking; and in summer time the house mother who gives her family frozen dainties finds the guests at her table devoted friends of her freezer.

#### DREAMS OF LIFE.

BY AMBROSE E. RIDENOUR, '96.

(Essay read before the Alpha Beta Literary Society, April 19th.)

WHEN life is in its infancy, when our childish eyes first look through the microscope of fancy, 'tis then we enter the land of dreams; a land where the carol of the lark and the song of the oriole are mingled with a thousand other notes of joy—a land of sunshine and shadows, of flowers and mingled sweet perfumes. Ah! 'Tis a paradise, this dream land of ours.

The toys with which you play are but the embryos of your fancies. The tin horse with its gallant rider suggests the stick horse on which you ride; and the real horses which you some day shall own—these beautify your dreams.

You have the very nicest friend, a little girl. You call her sister. With her you build that royal playhouse, walled by sticks and string, floored by sod, and carpeted with mingled sunshine and dew, canopied by the blue of heaven; and at its door the stately shade tree stands as sentinel. Here you welcome your little play-mate friends, and play with them the part you afterwards will live. Here you dream of a future home that shall be yours, and in your fancy you stroll through its halls and rooms; see the pictures on the walls, the carpets on the floor. A bird sings a song of love to you, and in the great upholstered chair by a cheerful crackling fire you lounge and dream. And here—it pains to say it—those little quarrels occur—clouds that fleck the life of every child, clouds that make the heart to quicker beat and the face to flush with passion; clouds that veil in mist the childish eyes, and condensing, fall as tears.

The woodland beckons; and through its countless winding paths you race and sing, gathering nature's wild and choicest flowers. In the laughing brook you wade and play, and wish for manhood days. In solitude you smoke the harmless grape-vine stem and dream—dream of the time when you will be quite large, and like the big boys that you know, smoke stronger things. Let us hope it will be but a dream.

The school door opens. You walk in and a dream is realized. Is it as your fancy painted? What was once your highest hope is now succeeded by another. This realized dream is the dawn of a new life. The ladder which you begin to climb is high, and the first round on which you stand is named "primary." With wonderment you watch the big boys play their games. In the near future you see yourself playing the same more skilfully than they. The years that must pass before you enter the highest grade, you live in fancy. But stop! strange stories you hear. "A heartless principal," they say. In your fancy, the stroke of a cruel whip and a faint cry of pain is heard. Your castle falls. The shadows pass, and your dream moves on again.

The band plays. The circus is here and gone. It has left something for you. It is the manna on which your imagination grows.

Rover is such a charming fellow. He knows the meaning of every look you give, of every motion you make. A word or sign, and away he bounds, you in full pursuit. An accidental slip, a fearful fall, an anguished cry, and an arm swings helpless. Rover, affectionate Rover, forgets the hunt, licks your injured hand, and kisses away the tears that flow. You put your arm about his neck and whisper pet names in his ear. You dream of death and wish that if you should die Rover might go with you.

An angel face smiles at you. It is with you when you play, and when sleep carries you to other worlds, the face accompanies you. A childish voice, as strains of music sweet, enchants. Across the meadow lands you race, hand in hand, gathering flowers and ripened fruit, and in some shady bower, you the flowers entwine and on her brow you place the wreath and call her queen. She does not know. Her, you would not care to tell. It is your first dream of love.

Death whispers "Come," and sister goes away. O'er your young heart a shadow falls. An unkind act of yours that could you but know she had forgiven! One look, one word, is all you ask, but it she cannot give. Those lips and eyelids, kissed by death, refuse to open at your call. In seclusion you seek an answer in your dreams.

Through childhood's fairy fields you race with childish friends; dream with them the sweet dreams of

(Continued on page 136.)



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20th.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds *à par*. The law requires that no bonds be sold at *par* or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Assistant Chemist Breese rides a new "Rugby" bicycle.

O. A. Otten, Fourth-year, had a light attack of the mumps this week.

Mr. J. G. McKeen, accompanied by Mr. Haney of Russell, visited College Monday.

Mabel Selby and Olive Wilson are again in senior classes, the mumps having abated.

Among the numerous visitors at College Friday afternoon were Mrs. Thompson and Mr. and Mrs. Paddleford.

Prof. Olin is elected a member of the Executive Board of the Kansas Academy of Language and Literature, in session last week at Emporia.

Mr. W. H. Austin, of Garden Plaine, Kan., general agent for the Central School Supply House of Chicago, visited College several times this week.

Dr. Lyman, for thirty years a practicing physician in Manhattan, has sold his business, and will move in about six weeks to San Diego, California, taking from College his two children in Third-year and Second-year classes.

Prof. Will spoke at Enterprise, Saturday evening, April 20th, under the auspices of the local Union for Practical Progress on "The Social Function of Religion."

Mr. Enos Herrold is again Foreman of the Iron Shops, having begun work last Monday. His previous experience in the position is a guaranty of satisfactory service.

The Home Insurance Company of New York yesterday paid to Pres. Fairchild, through their local agent, Mr. O. C. Barner, the \$1300 allowed upon the policy held by him. Upon the furniture the full insurance, \$600, was allowed. Upon the library, one-third of which was saved, the adjuster agreed to a loss of \$700 of the \$900 covered by the policy. All dealings of the Company have been courteous and prompt in every way.

The public exercises of Friday, April 26th, consisted of orations by the Fifth Division of the Third-year class. "A Comparison between Gambling and Speculation," John Poole; "A Significant Trifle," Inez Palmer; "Fools," A. L. Peter; "An Ancient Lake," Mary Painter; "Through Difficulties to the Stars," A. H. Morgan; "One of Victor Hugo's Stories," Hattie A. Paddleford; "Why Meditate, Why Reflect on the Past?" Charles Pincomb; "Reading for Spare Moments," Ellen Norton; "The Church and the Working Man," C. S. Marty; "College Examinations," Bertha Steele; Gaseo-cephalous," Charlie Lyman.

The National Educational Association will meet in Denver, Colo., on July 5th, next, and the officers of that body announce that the promise of attendance at that time is unprecedented in the history of the Association. This College, as the first representative of its line of work in the world, will undoubtedly be well represented by alumni, former students, and past and present officers at this great gathering of America's brightest and best. To increase the importance and value of this occasion to all such, it is proposed to establish a K. S. A. C. headquarters in Denver where the old family ties may be renewed and new ones formed. In order to perfect this plan it is requested that all who have ever been connected with this College in any capacity and who expect to attend this meeting shall inform Secretary Graham as soon as possible.

## Echoes from the Music Department.

The Spring Term, with its preparation for Commencement, has opened with renewed interest in the Music Department.

The number of pupils applying for instruction upon the piano was so great that many of them were compelled to change from the piano to some other instrument, and some to drop music altogether on account of the insufficient supply of instruments.

Prof. Brown and his assistant are kept busy all forenoon, and find it necessary to give a number of lessons in the afternoon on account of the variety and number of the classes.

The assignment for the term to date numbers 177, as follows: to the piano, 41; organ, 20; violin, 28; guitar, 10; mandolin, 6; banjo, 2; cello, 1; flute, 1; clarinet, 1; horns and band instruments, 20; vocal classes, 47.

## The Ionian Exhibition.

Good authorities unite in saying that the Sixth Annual Exhibition of the Ionians, given Friday night, was one of the best, if not the best, they ever gave. For originality and variety of productions they have set a pace which the other societies will do well to equal. The brilliant lighting of the stage by incandescent lights proved that the Ionians had profited well by the misfortunes of their brother societies. By 7:30 the chapel and halls were crowded, and at 8 o'clock the curtain rose on an orchestra of seventeen ladies, their instruments being guitars, mandolins, violins, a banjo, tambourine, violincello, and orchestra bells. The combination was a new one, and the selection, "Enchantress," extremely pretty. Nothing could possibly have met greater appreciation.

President Fairchild led in prayer. Miss Dora Thompson delivered a very pleasing and forcible address, entitled, "A Nation of Kings." She began with the quotation—

"Breathes there a man with soul so dead,  
Who never to himself hath said,  
This is my own, my native land?"



THE IONIANS.

ILLUSTRATION FROM PROGRAM, SIXTH ANNUAL EXHIBITION.

Every man admits the necessity of obeying civil authority; but he recognizes his christian right and duty to disobey under certain conditions. The real life of a nation depends on the loyalty of its people. Americans have every right to love their country since they enjoy the highest privileges of civilization—liberty, equality, and self-government. The steady, silent, but powerful advance of freedom is seen in the disruption of every monarchy in the new world. We step into the 20th century with noblest ideas, highest ideals, and every true American must echo the sentiment of these words:—

Thou, too, sail on, oh ship of State,  
Sail on, oh Union, strong and great.  
Humanity, with all her fears,  
With all its hope for future years,  
Is hanging, wreathless, on thy fate.  
Sail on; fear not to breast the sea,  
Our hearts, our hopes, our prayers, our tears;  
Our faith triumphant o'er our fears,  
Are all with thee, are all with thee.

A vocal trio, "Joyfulness," by Misses Pfuetze, Helder, and Selby, was exceptionally well sung and most heartily deserved the forbidden encore.

The Symposium, or triangular debate, treated three phases of the "Modern Novel." Hilda Leicester presented arguments in favor of the Realistic Novel. "Rising through all time there has been a yearning for truth in all lines. There is now a special demand for literary truth in the realistic novel. The novel of real life is a new type in which fiction is overlaid by facts—falsehood is intolerable. This is not an age of dreams. We want life as it is." For the Idealistic Novel, Sue Long said: "Our ideals mould our character. We dwell in a world of ideals; and we endeavor to inculcate into our own lives some degree of their perfection. The idealist gives life to our ideals—makes them tangible things. He reaches far into the human mind by intensifying life with his imagination." The Sociological Novel was advocated by Miriam Swingle. "One of the most powerful books ever produced appeared nine years before our Civil War. It was a novel with a purpose—it became a political as well as a social power. It did more than any ten men to overthrow slavery. Uncle Tom's Cabin was a sociological novel. Many of our popular novels owe their success to the reforms advocated. People lay the philosophical book aside for the novel—hence if the reformer would succeed he must write the sociological novel. Here the field for good is unlimited."

The duet, "Swing Song," by Misses Pfuetze and Lyman, was sung from a hammock swung across the stage. It was very natural and "cute."

Mabelle Selby's "Minuet" recitative with piano accompaniment was decidedly a feature of the entertainment, and completely a success. It met frequent and genuine applause from the audience.

The Society paper, the "Oracle," was a well-written and exceptionally well-read edition presented by Myrtle Hood. It was easily ahead of the average paper.

The "Whistling Chorus" gave startling evidence that whistling can no longer be called one of the manly arts.

"This, Too, Shall Pass Away" was the title of an oration by Mary Wilkin in which she spoke first of the transitory nature of man, and his works in all fields alike. Then of the gradual, imperceptible, but complete change in nature from year to year. Death and decay follow rapidly through these changes, and, since it is inevitable, we must learn to

worry not over the present, for it will soon be forgotten in the vast realm of eternity.

In the play, the Delphic Oracle prophesied with un-failing certainty the future of our four literary societies. The scene was laid in the temple of Apollo, at Delphi, in Greece, and the occasion was the annual assembling of the Greek tribes to learn the will of the gods as revealed to them by the Oracle, a priestess, upon whom the divine gift of prophecy has been bestowed. Among the tribes, come the Hamiltonians, the Apha Betas, Websterians, and Ionians, who offer tributes by which they hope to propitiate the gods in their favor. To each tribe is revealed a future in accordance with its deserts, and all joining in the Delphic chant, accept the fate the gods decree. The play was an original one composed by members of the Society, and put on under the direction of Hortensia Harman.

A quartette, "One Song With Me," closed the program. The credit for the splendid music, which formed such an important part of the program, belongs chiefly to Olive Wilson. The amount of work on stage decoration, lights, etc., was as good an advertisement for Ionian muscle as the program was for Ionian brains, and the credit for it belongs for the most part to Ada Rice, committee.

The programs, consisting of three cards, 3½ x 7 inches in size, fastened with ribbon, were unique, and an innovation in that the first card bore a half tone portrait of the sixty-nine members of the Society, which engraving is reproduced herewith. It is safe to say that not one of the 1200 programs printed will be thrown away.

J. V. P.

## GRADUATES AND FORMER STUDENTS.

Fanny Hacker, First-year in 1892-3, accompanied Ora Yenawine to Fourth-year classes on Monday.

Martha Harbord, Second-year in 1893-4, at present a student at Emporia, attended the Ionian annual.

Ernest Patten of Silver Lake, student last term, spends a vacation of two days from the farm visiting College.

Walter Harling, '94, and Bessie Perry, Second-year in 1886-7, were married, April 24th, at the home of the bride's parents, Dr. and Mrs. S. H. Perry, Manhattan.

Mrs. Lily E. Deen-Musgrove, of Salida, Colo., Second-year in 1886-7, is visiting with her sister, Mrs. Lantz, and called at the College yesterday. She will visit classmates at Minneapolis before going home.

Glenn McHugh, Second-year, drops out of classes to assist her sister in the candy store, a recent purchase. They succeed Mr. Danner in the management of the Manhattan Candy Kitchen, and do a thriving business.

Among former Ionians at the exhibition last evening were noticed graduates Julia Pearce, Ruth Stokes, Laura Day, Rena Helder, Bertha Winchip, Mayme Houghton, Edith McDowell, Nora Newell, Eusebia Mudge, Mary Lyman, and Belle Frisbie.

Eben Blachly, Second-year in 1892-3, having finished his school at Leonardville, visits at the College for a few days before joining a Government surveying party in the Indian Territory, where he will spend the summer, returning next fall to College.

V. I. Sandt, '94, and his wife, Alice Hood-Sandt, with Mr. Oakley and Miss Baine, drove down from Marysville Friday to make a short visit home, not forgetting the date of the Ionian annual. Miss Baine, now a fine musician, received instruction from Prof. Brown last year.

Miss Bertha Bacheller, '88, Principal of the Junction City High School, accompanied by three other teachers and the Senior Class, visited College on Wednesday. The young folks were deeply interested in the workings of the institution, so much so, in fact, that the luncheon hour was long passed before they knew it. The afternoon was given up to jollity, and at a late hour the party reluctantly left the prettiest spot in Kansas, wiser and happier for their day's visit.

## COLLEGE ORGANIZATIONS.

Student Editors.—Hortensia Harman, C. A. Johnson, J. V. Patten

Alpha Beta Society.—President, Nora Fryhofer; Vice-President, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J.



B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon. Admits to membership both ladies and gentlemen.

**Webster Society.**—President, W. H. Steuart; Vice-President, J. B. Harman; Recording Secretary, J. C. Wilkin; Corresponding Secretary, T. M. Robertson; Treasurer, J. E. Trembly; Critic, E. H. Webster; Marshal, A. G. Wilson; Board of Directors, S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, S. Nichols. Meets every Saturday evening at 8 o'clock. Admits to membership gentlemen only.

**Hamilton Society.**—President, W. H. Painter; Vice-President, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, L. A. Fitz; Board of Directors, E. C. Joss, S. Robbins, F. B. Yoder, C. D. Adams, V. Maelzer. Meets on Saturday evening at 8 o'clock. Admits to membership gentlemen only.

**Ionian Society.**—President, Flora Day; Vice-President, Mabel Selby; Recording Secretary, Minnie Pincomb; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Critic, Hortensia Harman; Board of Directors, Laura McKeen, Dora Thompson, Mabel Selby. Meets Friday afternoon. Admits to membership ladies only.

April 19th.

At three o'clock President Day called the Ionians to order. After singing, Mary Wilkin led in prayer. During roll-call the Society was serenaded by the "Ag." Band. On invitation they came in and favored the Society with an excellent, well-rendered selection. The President, in behalf of the Society, was instructed to thank them. A piano solo by Rena Helder was followed by an impersonation "A Country Couple at a Circus," by Hortensia Harmon and Ary Johnson, Amelia Pfeutze, committee. This was certainly a laughable representation and showed that the girls were well versed in "country ways." It was thoroughly enjoyed by all the Society. In an original story, Ruth Brockway gave an interesting account of a botanical excursion in Macomb, Ill. The debate, "Resolved, That the divorce laws should be made more stringent," was argued on the affirmative by Ellen Norton and Tacy Stokes, on the negative by Edith Lantz and Ida Walters. Both sides introduced excellent arguments, but the judges, Laura McKeen and Messrs. Otis and Phipps, decided unanimously in favor of the affirmative. This was followed by a vocal solo by Amelia Pfeutze, accompanied on the piano by Rena Helder. The Oracle, with the motto, "Love is Sunshine," was presented by Joanna Freeman. Under election of officers, Minnie Pincomb was elected Recording Secretary, and Dora Thompson one of the Board of Directors. After the usual routine business, the Society adjourned. W. A. H.

April 20th.

The Hamilton Society was called to order by President Painter. O. A. Otten was initiated as critic. An essay entitled, "Manhattan Marriages," by B. W. Conrad, brought out many interesting features of oriental matrimony. C. D. Adams related a New Mexico romance in which a young hunter from the East in a thrilling adventure rescues a widow's fair daughter from a runaway horse—I will leave the rest of the story for you to supply. A pathetic story entitled, "Mad," was well delivered by A. G. Farley. "Pumpkin Pie" was the title of an essay by C. B. Ingman. C. S. Marty read a humorous selection about wedding gowns. The debate on the question, "Resolved, that the overthrow of slavery in the United States was due more to moral influence than to political power," was opened by C. E. Pincomb. The speaker stated that no action toward liberating the slaves was taken until moral influences had prepared the public mind for such a step, that even in the Civil War the Federals avoided the issue of slavery altogether at first and adopted it later only as a means to course the seceded States back into the Union, "in fact," said the speaker, "slavery was in politics only so far as moral influence favored the issue." E. C. Joss took up the negative. He considered slavery as a question of politics strictly; slavery was a political issue even when the Constitution was adopted and it remained a political issue until its abolition. "Not moral influence," said he, "but financial influence overthrew slavery in the United States." He cited several instances to substantiate his argument. J. W. Adams took up the affirmative further, maintaining that the freeing of slaves was the direct outcome of the moral sentiment which had aroused the people to the great wrong of human slavery. Wm. Barnard rebutted part of the argument brought forth by the affirmative. Society decided in favor of the affirmative. William Anderson closed the program with an ideal "Prevarication." No sooner had the program closed than half a dozen members were on the floor demanding recognition. Soon points of order and appeals followed each other in rapid succession, and for more than an hour an animated parliamentary discussion followed. No sooner would one speaker take his seat than a dozen or more would be on their feet for recognition. Before any business was reached the janitor's appearance put an end to our pleasure. J. W. H.

Working people in every position in life need the aid of a mental stimulus to keep them above the annoyance of every-day wear and tear living. There is no period when organized living matter is at a standstill. It is either up hill or down grade that we are irrevocably tending, physically and mentally, continually. While good Dame Nature furnishes much that is requisite for the keeping of the farmer's family in good bodily health, she just as surely has isolated him socially. Hills, valleys, and poor roads mean obstacles to overcome. Consequently there was need to do something outside of the usual routine. The board of agriculture and the grange have worked hand in hand to this end. It has resulted in a new revelation of life to those men and women who had dropped into the ruts and so expected to finish life. No city-bred person can understand or appreciate these conditions or changes. No person can fully know the truth unless he has been in the midst. Men and women of ability and worth have found a place for new hopes and revived energies. The worth of this good work that has been carried on by practical workers cannot be readily estimated.—Mrs. Alonzo Towle.

## DREAMS OF LIFE.

(Continued from page 134)

youth; build with them the towering air castles, draped in love's choicest flowers, all golden with the sunshine of hope. Through the pearly gates of youth you pass and enter manhood. Your dreams grow more and more mature, and you gather in life's autumn the ripened fruit, and welcome winters chilling blast. 'Tis thus we dream throughout the whole of life. We are dreamers, and life is filled with dreams.

### The Girl of the Present.

To eyes of discernment, the young girl of the period presents a new type, rich in promise for the future. When the doors of her alma mater close behind her, the girl graduate of today has a purpose aside from social ambition and a speedy marriage. Happily the "child-wife" is becoming a thing of the past, belonging to pages of fiction rather than victimizing herself and the young husband of her immature choice upon the stage of real life. The pretty, whimsical "Dora" of Dickens' creation, however charming she may be, is no longer regarded as a desirable companion on the long and serious journey of matrimony.

The spirit of the age possesses the girl of the present, and she comprehends the importance of fitting herself for duties that await her from a broad platform of intelligence and knowledge. Eager to improve every opportunity for mental and physical advancement, her decisions are marked by independence and common sense.

Knowing that health is a necessary foundation for success in any line, she guards it as a priceless jewel. Illness and nerves are now considered a reproach rather than interesting; therefore, in her dressing room, the horizontal bars, dumb-bells, etc., find place to the exclusion of all cosmetics. Daily walks and out-door sports furnish the roses and lilies of beauty, the grace of motion and freedom of gait that distinguish the new girl of the nineteenth century.

If she has but the "one talent," it is cultivated as a duty and exercised for the pleasure of her friends and oftentimes in aid of charity. Her view is an honest one—if she can help a good cause by playing, singing, or reciting, it is counted as her gift, while in giving money she is her father's almoner. \* \* \*

She regards the crown of wife and motherhood as women's highest honor, and to be a "home-maker" in its truest sense is her chief ambition. A knowledge of cooking, both in theory and in practice, is absolutely essential to this end, and therefore she perfects herself in its many branches, adding judicious marketing as a necessary point in household economy. She is a tender, thoughtful daughter, and in her desire to "reheve mother" finds the care of the house a light burden for her young shoulders, as well as an invaluable school of practice.

In the past when a father met with reverse of fortune, a family of "helpless daughters" was regarded as his heaviest burden. It is only charity to believe that these young girls of the past were willing in spirit, but so hedged in by false idea of woman's sphere and lack of opportunity that their "helplessness" was compulsory rather than voluntary.

Avenues are now so generously open that to learn some one thing thoroughly, to serve as a refuge in the day of adversity, is easily accomplished. If never needed, the knowledge is not burdensome, and can be stored away carefully, yielding a dividend of comfort and security. In these times of uncertainty, when "riches take wings" without warning, parents—however prosperous their present circumstances—can not conscientiously oppose this ambition of a daughter to place herself upon a basis of independence. \* \* \*

There are little women of the more distant future with as yet nothing between the mother heart and their innocence! If "character is like porcelain, to be painted before it is glazed, as no change can be made after it is burned in," every impress must be sweet and pure. If this be guarded, the mother may trust the little girl of her love to be a "woman of the future," in whom she will rejoice. In this new life of her own, reachings after truth and good works will find full fruition.—Table Talk.

### Good Farmers Not Made of Useless Timber.

When will the people learn that good farmers cannot be made of any one at all lazy or of timber useless in other callings? And when will the common sense applied to the learning of others be likewise applied to this, the deepest and highest of all trades?

It is no doubt true that a young man of the right make-up can begin farming for himself without the least knowledge of the business, and by study and application make a perfect success of it; but the same can be said of other trades, etc. And yet the more natural and proper way is to obtain the results of the past and present ages by working for or observing some one standing in the foremost rank of farmers. Perhaps in a great majority of cases this will prove to be the cheapest.

Every writer keeps his or her favorite papers and periodicals "on file." At least, they preserve a great many of them in some form. So, also, do a great many people who do not write, but read a great deal, and profit by what they read, for they want the old papers for reference, many times.—Nellie Hawks, in *Agricultural Epitome*.

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

## MANHATTAN ADVERTISEMENTS.

### BOOKS AND STATIONERY.

**FOX'S BOOK STORE.**—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

**R. E. LOFINCK** deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

**VARNEY'S BOOK-STORE.**—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

**LESLIE SMITH.** College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

### DRY GOODS.

**E. A. WHARTON'S** is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

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**ELLIOT & GARRETSON,** Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

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# THE INDUSTRIALIST.

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#### FUNDAMENTALS IN SOCIAL SCIENCE.

BY PRES. GEO. T. FAIRCHILD.

THE importance of complete analysis and exact definitions in science is universally recognized. Nobody attempts to talk upon a subject of scientific importance until he has at least endeavored to master the classification of elementary ideas and given to each its own peculiar name, not to be confounded with any other. Unfortunately the immediate interest of social questions is so evident that every observer feels drawn into discussion of the merits of others' opinions, and picks up the words of his neighbors as if they had the accuracy of figures, when he himself has perhaps little apprehension of terms or ideas, and still less complete analysis of the facts and experiences of which he talks. Especially is this true of literary philanthropists, whose training in the use of words is rather rhetorical than scientific, and whose delight is in striking analogies or vivid metaphors. Much of the confusion of tongues, more destructive than that of Babel, which troubles our day would be removed if all could stop to lay clear foundations for thinking in the very elementary facts.

Social science embraces all the essentials of human welfare. "I am a man, and nothing human is foreign to me," the saying of an ancient philosopher, must be in the mouth of every student of social science. For this reason he must take the greater care to analyze and classify with the utmost distinctness and completeness, and go back to his fundamental analysis with every step of progress in the study of human weal. Otherwise he is likely to argue in a circle of mere words, or, worse still, to ignore most prominent facts in human experience. Most fundamental is the fact that his study is the welfare of all humanity, for all time, in all places, not simply his own welfare here and now. The saying of Antoninus, "A rational nature admits of nothing but what is serviceable to the rest of mankind," should be written large over every chapter of his investigations. Next to this should stand the equally fundamental idea that the true welfare of the individual in society is bound up in the welfare of the whole, while the welfare of the whole is made up of individual welfare. In short, the true student of sociology must be able to grasp the meaning of Tennyson in that noble couplet—

"For all men find their own in all men's good,  
And all men join in noble brotherhood."

A careful analysis of welfare is just as important, for upon this all the subdivisions of scientific inquiry depend. No assumption that every kind of welfare is of equal importance will serve to give a fair basis for ordinary thought about welfare; much less can it serve for exact distinctions and definitions. At the foundation it is best to think of welfare as embracing four kinds of satisfaction for every individual. If he is healthy, wealthy, wise, and good, he has all the satisfaction a human being can have by himself. So a society providing for the health, wealth, wisdom, and virtue of all its members reaches the ideal of welfare in society. These four kinds of weal are as distinct in our activity as social beings as they are in our intellectual analysis. Hence there are naturally four grand divisions of the subject of sociology. We must study the natural laws of public health, of public wealth, of public wisdom, and of public virtue. It will not do to confound them under general terms, like "laws of welfare," any more than it will to confuse the activities of matter and mind under the one term, "energy."

While welfare is a proper combination of all, each of these forms of satisfaction comes in conformity to certain laws as natural as the law of gravitation. To study these laws requires distinct and definite observation, as remote from mere analogies as possible. For it is true here as in all nature, that we "rule by obeying nature's powers." Nature's powers invite to intimate scrutiny of every element of matter and force. The laws of public health are not the same with those of public wealth, and may be incompatible in certain conditions. It will not do to call health a part of wealth, though both are a part of welfare. The wisdom of the sage may provide for health, but it is a distinct good. So strength or skill may be a better means of providing food tomorrow than a store of food awaiting use; but neither can take the exact place of the other. While wealth is welfare of a certain character, under certain definite conditions, we can study laws of production, distribution, and consumption of wealth with clear understanding only when we hold the word to its elementary meaning. In this meaning, we include with safety only such accumulated ability in our store of material good

things as can be depended upon in present conditions to supply any and all wants. Any other ability in us or in our friends must be considered as a force affecting, perhaps, the conditions of wealth, but always distinguished from the wealth itself.

Similar care must be given to distinguish between capital in all its forms, and the skill, intelligence, and character that enable us to use capital to advantage. Nothing is gained, but much of clearness is lost in calling a man's technical skill his capital in business, when everybody knows that a combination of power in the shape of skill with wealth in the shape of material, tools, and means of support leads to the finished product.

It is worth the while of every student of social questions to be as exacting in his nomenclature of this new science of sociology as he expects the student of chemistry or physics to be in his field. Let every word stand for a distinct idea, and with every variation give the qualifying word which marks the variety.

#### PORCHES AND PORCHES.

BY JULIA R. PEARCE.

IK MARVEL has said that a porch is to a house what the eyebrow is to the face. It gives expression. In some degree a house shows the character, the home-making qualities of the man who built it, especially if he is building it for his own home. If he is a lover of the open air, if he loves the sound of rustling leaves and of bees at work among the blossoms, if he likes to feel that he is a part of all outdoors, he will build a porch of some kind to his house, even if he sacrifice one room on the inside.

We can all of us call to mind some man with no poetry in his soul, who works hard all his life, collecting and saving to spend and enjoy never; who feeds and clothes his family with necessities in a business-like way; whose idea of home is a place to stay nights, to come into when it rains. We all know just what kind of a house he will build when he builds himself a home. The house will be square, say two story; you can pack more into a house of that shape. There will be no porch, no balcony. He wouldn't know what to do with them. There'll be no hammock or garden chair among the trees, probably no trees, about his house. The home proclaims the man.

Then, there is the pretentious house with the pretentious veranda, a huge affair. House and porch are up high from the ground where folks can see them. That's what they are for. This man entertains on a large scale. His friends—social friends, not heart friends—are invited to receptions here. It's all for the public—outsiders. His porch is too much exposed to the world, to the street, to be of use to home folks. No one enjoys taking a book and sitting down in a garden chair on a sidewalk.

Then, there is the small, low porch with a railing around to keep out intruders, perhaps. This porch isn't large enough to welcome many, just a few friends who are thus brought closer. The man who builds a small porch with a railing around it will probably have a fence around his yard. His home is for his family and a few friends, not for the public.

There is much meaning also in one's back porch. It may easily express one's ideas of cleanliness and home comfort. It may be covered with vines, may be a place to sit and shell peas and pick over strawberries, or a place for swill buckets and wash tubs only.

And balconies, why is it we have so few in this section of country? Kansas, sunny Kansas, is lauded for her Italian skies, and surely no land has lovelier evenings than Kansas can boast for at least eight months of the year, and still we have so few facilities about our houses for enjoying the open air. A western balcony where one could take one's work in the morning, or one on the shady side of the house on hot afternoons, might double the real home-like qualities of many of our large barn-like houses. In this western land there are so few homes, only houses rented for a season, houses that were built to rent, not meant for homes. In older lands where one place has been occupied by the same family for more than a generation, the characteristics of the builder of the home show at every turn. Every walk, fence, porch, and window, or the lack of them, the house inside and out, has in its repair and growth grown more and more suggestive of the loves of the owner.

Don't you somehow feel sure you will find pleasant people and a warm welcome when you approach a house with a broad, low veranda which reaches nearly around the house? There are sure to be roses clambering up the pillars, running riot over the roof, and



hanging down from the archways. There is a hammock swung across one corner, pillows in the hammock and on the porch floor. In another corner of this inviting place around a corner of the house, perhaps, is a vine-sheltered nook where you will find a table with books and magazines and another hammock or a rustic bench where pillows are again in evidence. This is a corner much sought after by each member of the family. The children, with their toys and their dog, have possession in the morning; grandfather brings his paper out here after dinner and snoozes away the long hot afternoon, leaving only in time to make way for some lady member of the household who wishes to serve ice cream out here in the cool shade. Then, in the evening, there is room on this veranda for the whole family to gather, while perhaps the particular corner in question is left to the daughter of the house in which to entertain her especial Tom, Dick, or Harry.

Here, in these evening reunions, the family seems knit closer together. The moon, peering through the leaves of the vine on the porch, traces an ever-shifting mosaic pattern on the floor, and sprinkling moonbeams over the occupants of the hammocks, over speaker and listeners, seems to soften the effect or hide in shadow many a rough angle in dispositions which it seems impossible to lose sight of through the day; it seems easier here to confide in each other the various plans and aspirations. The man who builds such a porch to a house must have a broad hospitality, a sympathetic heart. He has many warm friends. His heart and his veranda leave room for all, many delights for old and young.

#### Our Farmer Boys.

How proud we feel of our boys this evening as they come into our five o'clock supper with their faces flushed and eyes bright with the exertion of doing the evening's work, and their hair lying in damp clusters on their brows.

We may well feel proud of them, for in no station of life will we meet with a more manly or purer hearted class of boys, but they have their faults.

We expect no one to be perfect, but because of this pride we naturally feel for all our farmer boys, we want them to be just as nice, just as gentlemanly as it is possible for them to be, and—are they?

Very few boys sit down to the table without first washing face and hands and brushing their hair. Yes, some do, but we are speaking of our boys in general.

But with such preparation their toilet is complete, and they sit down to the table coatless and often without a vest of any kind, while a few moments would have been sufficient in which to make the change, and the improved appearance amply repays the trouble.

One of our national faults is the hasty manner in which our food is eaten. We farmers have the most excuse, perhaps, as we are always so busy, still we do not like to have our boys devour their food in two mouthfuls, with elbows upon the table and head bowed in their plates. We can be just as quiet and just as mannerly as any one if we try; let us at least make the effort. Do not think "manners count for little." I would even rather you took for your motto: "Manners Make the Man."

The time is coming, if it is not already here, when our boys will be respected for their worth and be called to high positions; how much better for them if they learn the hundred and one little actions which count for so much in society; how much better if they are taught at home, than for our boys to go into society awkward and ill at ease because they are afraid they will make a blunder.

We read of the evils of society, the waste of time and money, but I think, and with reason, that our children suffer from lack of society, and again I say that in a measure "manners make the man."—*Lela Moore, in Agricultural Epitome.*

At the last meeting of the Franklin Farmers' Club, E. K. Ray read a paper upon "Farming as Business by a Business Man" in which he said: "Farming is beginning to be looked upon more as a business. But until recently, around New England, at least, farming with but exceptional cases, has been done in such a lackadaisical, slipshod fashion, that to hear a man was a farmer was almost the same as to hear that he was a hardworking, upright, good sort of a man, but of course not very brilliant; and knew but just enough to run a farm. As people wake up to the fact that brains, education, and business principles can improve the business of farming just as much as any other business; just so soon the condition of farming will be improved and it will become more like other kinds of business. The effect of all these money panics is going to be a driving back of men into the land."—*New Hampshire Mirror and Farmer.*

The farmer who shelters, oils, and repairs his machinery each year as soon as done using it, snaps his fingers at combinations and all that, for a good machine will last his life time. His neighbor has bought on credit, and his machine is rusted out by the time notes become due, and he sighs that a farmer's lot is a mighty hard one; and so it is to the man who farms in this way. In fact, any lot would be hard to the man who went through the world in a slipshod fashion.

#### A Glimpse at Our State Agricultural College.

Mrs. Daughters of Lincoln accompanied her husband, a Regent of the College, to the last quarterly meeting of the Board. What she saw here, she writes of in the *Lincoln Republican* in an entertaining way. We quote:—

At the last session of the State Legislature one of the members, in a speech made during the discussion of the State appropriations, expressed a wish that Kansas would provide as good a school as the Agricultural College for the benefit of lawyers' children, as if the doors of that institution were not open to all classes. Such may have been the original intention of the projectors, but President Fairchild enlarged upon the plan, building on a nobler, broader foundation, and the result of his work is that in this school students of any class, from the farm or city, can receive a symmetrical education. The object is not only to make agriculturists of those who wish, but to fit any boy or girl for the actual duties of life, including that of "getting a living." The training of the eye and hand being acknowledged indispensable to a complete education of the brain,—brain thinking and hand doing,—the observation and judgment being properly cultivated only through the training of the hand, the whole individual—brains, eyes, and limbs—are in school.

The regular literary curriculum is not crowded out by the industrials. They are merely added to it, and the result is, first of all, moral gain by the acquiring of habits of industry and a high idea of the dignity of hand labor; intellectual gain by immediate application of knowledge, and physical gain by the alternation of brain with hand work.

It is interesting to note the zest with which the students enter the work rooms after their recitation and lectures in the various studies. They go to hard manual labor with as much elation as the average college boy does to a game of foot-ball, and take as much pride in their prowess. Every young man must spend one hour daily during his first term in carpentry. After that he is allowed to make his own selection of an industry from farming, horticulture, wood and iron work, printing, and instrumental music. The young ladies must have sewing the first term, and after that can take cooking and dairying, dress-making, or any of the industries they choose. All of the departments turn out excellent work. Many finely finished articles in use in the offices of the professors are the work of the students. One, a cylinder top, self-locking desk, was ingeniously contrived, and as handsomely finished as any found in our best factories. In iron work also are pieces of intricate machinery made by the boys. The beautiful, well kept farm, garden, and orchards show to even the most careless eye that all love their labor enough to be thorough and conscientious in doing their tasks. In the early morning they are out in companies for military drill, under the command of an officer of the U. S. A. They have a fine band of some 20 or more instruments. They have just received their new uniforms and guns, and are as proud of their outfit as most newly enlisted state militiamen.

But the place to make a woman regret that she was born in the 1850's instead of some twenty-five years later is in visiting the department devoted to domestic science, under Mrs. Kedzie. In the kitchen are seen daily bright-faced girls in neat dresses, well protected by big gingham aprons, all busy at the work assigned them, some washing dishes, some cleaning silver, others cutting up fragments of meat for some economic yet edible dish. In another division Mrs. Kedzie is giving a class in special cookery a lecture on cake-making. All the classes have lectures in hygienic cooking. They are taught how to cook, and what is best to buy for cooking. As an illustration, once each year a beef is cut up before the class, and the different cuts are lectured upon as to the best methods of preparing, and also most economic for table use. They also have lessons on bread-making, cake and pastries, puddings, canning and preserving fruits. The pantry shows fine specimens of their work in this line, and show cases in Mrs. Kedzie's office attest to the perfection of their cake baking and confectionery. The dairy, with its bright pans of Jersey milk and moulds of golden butter, is another place of work adjoining the kitchen.

At the opening of the spring term the cooking class of the Third-year girls gave a tea to the officers of the institution. The following menu was prepared entirely by the class and every dish was perfect:—

MENU.		
Cold Sliced Ham.	Potato Salad.	Salmon Toast.
Hot Rolls.	Cucumber Pickles.	Preserved Peaches.
Salted Almonds.	Brick Ice Cream.	Olives.
White Loaf Cake.	Pine Apple Cake.	

There were five tables daintily arranged, and prettily decorated with maiden's hair ferns and daffodils. Fifty-six guests were present. Two post-graduate girls acted as host and hostess at each table, and Third-year girls served as waiters and cooks. There are times in almost every housekeeper's life when the knowledge these girls gain in such lessons would be invaluable. Cook books do not furnish us details we need. We must have experience, and surely that is obtained in a more pleasant manner here than it came to their mothers. The cooking class also furnishes five and ten cent lunches for the teachers and students twice a week. In this way most of the material used in the lessons is paid for.

Mrs. Kedzie has wonderful tact, and makes domestic science attractive under difficulties that most women would be unable to cope with. The kitchen and dining room are in the basement of the building,

and are poorly lighted and too small for the large classes that seek instruction, but in some manner she makes the dark rooms seem pleasant and cheerful, every thing is orderly and scrupulously clean. She does a grand work for the emancipation of women. Like the fairy godmother in the nursery tales, she takes poor Cinderella out of the ashes and makes her a queen. The mothers of Kansas girls should use their influence in obtaining that appropriation for the new kitchen that is so badly needed to help on this good work.

This article is already too long to permit describing the sewing room minutely, but the work done by the seventy girls in the classes is equal to that done in the other departments. Beautiful embroidery and fancy work, tasteful, well-fitting dresses, finely made underwear, fill the wardrobes and show cases, some marked sold, as the girls, many of them, earn money by their needles. An apron was recently on exhibition that was to be sent to the Inter-State Apron Fair, held in one of the Southern cities. The design for the embroidery was drawn by one of the girls, and was of miniature sunflowers and leaves, in natural colors, and looked as if some light breeze had stranded them on the filmy linen, and in and out among the leaves and flowers in graceful lettering were the words, "I want to be in Kansas when the sunflowers bloom."

#### The Successful Farmer.

No other line of business is managed with so little care and forethought, with so little study of its possibilities by those engaged in it as farming; and it is largely owing to this that there are so few really successful farmers. Many sow their grain upon insufficiently enriched soil, and without the necessary tillage; seeming to think if it is only in the ground, they have done their part; and when harvest time brings only half a crop, call it "just their luck." There is no reason why farming may not be made to pay as well as any other line of business, provided it is given an equal amount of study and careful management. The specialist is more liable to succeed taking it year after year than the man who follows mixed farming. Take the potato raiser as an example. He learns to make use of the best kinds of fertilizers; of the method of planting; of the best soil suited to the production of large yields of potatoes; of the best method of getting rid of bugs; of the most labor-saving and economical way of harvesting; and the best time to market. Experience alone will teach these things.

If he experiments one year, he is sure of his ground the next. The price may not always be satisfactory, but with his experience in handling his specialty he knows exactly how to make the most of it, and where to look for best returns. One year with another the potato specialist will make money. Again, if a farm is well adapted to dairying—and some farms can thus be made to pay a good profit which would not with anything else—and the owner is a man who takes an interest in his work, and is determined to make the most out of his business, he will make money every year and his farm will be in better condition with each succeeding season. Raising hogs goes well with the butter-making branch of dairying. Let every man study his farm and determine to do the very best with it. Never half prepare a field for seed. Impoverished soil cannot produce a paying crop of anything. If stable manure is abundant, use it. If not, buy unsparingly of the best Kansas fertilizer if the soil needs it. After the crop has been sown and planted in a good seed bed, take care of it.

Probably all are acquainted with farmers who lose money every year by neglecting their crops. It may be beans, roots, or potatoes which are choked with weeds which retard the growth and spoil the crop; or a field of grass is allowed to stand until too ripe, making the hay of inferior quality, consequently bringing a low price. Such losses must be guarded against or the profit soon disappears. To neglect a field of potatoes when the bugs attack them may mean a serious loss which a little care and attention would have saved. The man who would succeed as a farmer must have open eyes to the most profitable way of buying, and when an article is bought take care of it. More expensive farm implements are destroyed every year by the wind, sun, and rain than are worn out. All these and many other points must be carefully considered in order to have the farm accounts balance as they should at the end of the year. Study your business; let your expenditures be governed by your income; make the most of every opportunity and success awaits your efforts.—*E. E. Rockwood, in Orange Judd Farmer.*

#### Does Spraying Kill Bees?

Ever since the spraying with arsenites was introduced, repeated cautions have been given against their use while the trees are in bloom, lest the bees be destroyed. Prof. Webster found that spraying a few late blossoms with paris green destroyed a number of hives near by. To determine whether they were poisoned by the arsenites, some dead bees were washed and the wash water showed a considerable quantity of arsenic upon the outside of the bodies. An examination was then made of the alimentary canal with the food, and arsenic was found in abundance in the abdomen. This showed clearly that poisons had been eaten and killed them. Other experiments where plums and crabs were sprayed while in blossom showed similar results. Such experiments should convince everyone of the folly of applying arsenites while trees are in bloom.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20th.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

## GENERAL LOCAL NOTES.

Grant Selby, accompanied by his friend, W. R. Mount, of the Crocker Uniform Co. of Chicago, were interested visitors on Saturday last.

G. B. Norris, Third-year, finds it necessary to drop out of classes on account of an abscess coming under his chin. He was obliged to leave College last spring for a similar reason.

Judge and Mrs. Foote, of Marion, visited their daughter in College on Monday, and the Judge addressed the students in chapel in words of commendation and encouragement.

G. W. Fryhofer, Fourth-year, spends today (May 4th) at home near Randolph to allow his parents and friends opportunity to "surprise" him on the occasion of the birthday that makes him a voter.

Geo. F. Thompson, Superintendent of Printing at this College from 1881 to 1887, has been promoted to the Statistical Division, Department of Agriculture, at Washington, with a salary of \$1,400.

The Alpha Beta and Webster Societies have recognized Mr. McCreary's efficient services in their behalf by presenting him with the organ recently displaced by the piano they purchased.

Governor Morrill has appointed Prof. White as State delegate to the National Conference of Charities and Corrections to be held at New Haven, Conn., May 24th-30th. College duties will make it impossible for him to attend.

Dewey and Dewey, photographers, have recently taken a picture of the College grounds and buildings from the roof of Prof. Willard's house which is by far the best view of the kind yet made. Reproductions of it will adorn the pages of the Catalogue and the Class Book.

The Young Women's Christian Association has elected the following officers for the ensuing year: Ellen Norton, President; Gertie Lyman, Vice-President; Fannie Parkinson, Recording Secretary; Grace Stokes, Corresponding Secretary; Cora Thackrey, Treasurer. The Association will send their President to the Summer School at Lake Geneva, Wis., in the early part of July.

Capt. E. B. Bolton, formerly connected with this College, sent to the herbarium a number of interesting Texas plants, among them a specimen of the Resurrection Plant. This is a species of *Selaginella*, which, during dry weather, rolls up in a ball and is blown hither and thither at the mercy of the winds. Having come in contact with moisture, it spreads out, takes root, and becomes active.

The State Agricultural College is not stuck up, and thought little of it when a London paper spoke of it the other day as a model for such institutions in the old world, but when an article on fish culture, written by one of the professors and published in the INDUSTRIALIST, was republished in Bent Murdock's *Republican*, the entire Faculty felt that it was the proudest moment of their lives.—*Topeka Capital*.

The herbarium has received another valuable contribution from Mr. Elam Bartholomew of Rockport, Kansas. He sends, neatly labeled, put up in packets and ready for mounting, 160 species of fungi on 162 host plants. Mr. Bartholomew is an indefatigable collector and an acute observer. His former contributions have included many plants found by no other collector in the State. The herbarium is fortunate in receiving such hearty support.

Mr. C. O. Coe, of Clifton, Kan., State Agent for the Western Cottage Organ Company, visited College Tuesday. He was shown through the buildings by two lady friends, and when in the kitchen horrified his fair guides by swallowing a long, sharp-pointed, keen-edged, wide-bladed carving knife with all the neatness and dispatch of a professional juggler. So easily was the trick accomplished that only an inventory or an autopsy will free Mr. Coe from the suspicion that a half-dozen of Mrs. Kedzie's large, juicy silver spoons did not disappear down his capacious throat.

The death of Mrs. Cavanaugh yesterday morning when those attending thought she was growing better, and when so many did not know she was even sick, was a shock to the community as sudden as it was sorrowful. Mrs. Cavanaugh had been sick for a week, and Thursday evening seemed to show such marked improvement that preparations were continued for her proposed visit to West Point to see her son Harry graduate from the Military Academy in June. Death resulted from inflammation of the bowels. Funeral services will be held at the Episcopal Church Sunday evening, and on Monday the body will be taken to Leavenworth for burial. Deceased leaves a husband, Capt. Cavanaugh, 13th U. S. Infantry, on a four-year detail as Professor of Military Science and

Tactics at this College, a daughter, Marie, aged 13 years, and two sons—Harry, the elder, a Senior student at West Point, and William, a Third-year student here. In the death of Mrs. Cavanaugh the family lose a loved and loving wife and mother, close acquaintances a kind, sympathetic friend, and society a valued member.

Major N. A. Adams, one of Manhattan's oldest citizens, died Thursday morning after a brief illness. The funeral services will be held Sunday afternoon, conducted by the Masonic fraternity. Major Adams was Regent of the College from 1873 to 1878, and for four years of this period was Secretary of the Board. He was a faithful, painstaking officer in this as well as other positions of prominence and trust bestowed upon him during his busy life. His death is deeply regretted by a wide circle of friends.

## GRADUATES AND FORMER STUDENTS.

C. C. Smith, '94, finds time to visit College now and then, having finished his school near Alma.

J. H. Persinger, Second-year in 1891-2, writes of interest in the ensilage question as reported in Bulletin No. 48 of the Experiment Station.

G. W. Smith, '93, is General Agent for Southeast Kansas for the Okolo Company, with headquarters in Topeka. He will begin work in a few weeks.

J. B. Thoburn, '93, rode up horse-back from Peabody, this week, arriving at the College yesterday. Mrs. Callie Conwell-Thoburn, '91, who is visiting with her parents on Deep Creek, called at the College yesterday in company of Delpha Hoop, '91.

O. G. Harmon, Second-year in 1889-90, and a State Normal graduate of last year, visited the College Friday with his wife and infant son. Harmon is the same droll, good-natured fellow as of old, and all the time he can spare from his interesting family he devotes to farming and teaching near White City.

Mr. Chas. A. Streeter, a student in the early seventies and foreman of the Horticultural Department at the time, now a prosperous farmer and mill owner near Milford, spent yesterday at the College with his daughter Ama and two of her girl friends, the Misses Kneeland. Mr. Streeter brought the young people over to show them the College, looking to their entering next year.

In anticipation of the necessity of an addition to the faculty of the High School, Mr. Dickens, who is now taking post-graduate work at the State Agricultural College, came up last week to interview the school board as to chances. Mr. Dickens graduated two years ago. Last year he had charge of the Bushton schools, and has since been given a State certificate. While here he was the guest of Miss Bacheller. —*Junction City Union*.

W. O. Lyon, '93, surprised College friends in a double sense one day this week: first, by his sudden appearance in their midst; second, by his wearing of a Derby hat of most peculiar shape which he claims is the latest Clay Center style. Local authorities among his friends do not question the statement, but recognize the pattern as one in vogue here several seasons ago, and it is so far antiquated this year as to be worn by the mascot of a ball club.

## Notes From the Orchards and Gardens.

The effect of last year's drouth is shown in the unusual number of dead trees in the belts about the grounds. Birches and pines have suffered especially, and catalpas to a considerable extent.

The vines in the experimental vineyard have been tied up to the trellis during the past week. It has been necessary to do an unusual amount of spring pruning on them on account of the ravages of the grape twig borer (*Amphyceris bicaudatus*). The adult insect bores into the cane just above the bud, and the whole cane is weakened, often killed, or it may often break off. As many as eight of the beetles have been found in a single burrow not more than eight inches in length. The only remedy seems to be to cut off the injured canes and destroy them along with the insects they contain, and to carefully rake up and burn all trimmings that may be lying about the vineyard, as the beetles will bore into these and breed during the summer.

Until the last week or so the promise for an abundant strawberry crop has not been very flattering. The vines seemed to start very slowly, and did not blossom well. But during the last few days the bed has shown a decided improvement, and the outlook now is very fair, though the crop will be late in ripening. The bulk of the varieties are just now in full bloom. With perhaps the single exception of grapes, the promise for an abundant crop of all other kinds of fruit is good. Apples, cherries, plums, peaches, and apricots have all set a heavy crop, and with any fair sort of a season fruit ought to be plentiful.

Among several things on the grounds that are worth seeing just now, the finest is a small row of *Spirea Reevesii* at the north end of the arboretum. The bushes are one solid mass of white flowers. The shrubs have been grown in the grounds but two years, but so far prove perfectly hardy, and the fact that they can withstand a drouth like that of '94 is pretty good evidence of their ability to pull through almost any season.

A new vineyard of one hundred and thirty-five vines has been set just south of the old original vineyard. The vines set consist for the most part of Concord and Worden, with a few other standard sorts. The plan is to have all the different systems of training represented in this vineyard, partly to test their comparative merits, and partly to familiarize the boys

having their industrial in the department with the different methods of training.

With twenty-six boys taking regular industrial work in the department, and thirty specials, the grounds present a busy appearance during industrial hours in the afternoon, but so far there has been plenty to keep all hands busy.

The seedling peaches which did not "take" last fall are being budded again with buds of the Crosby peach obtained from Mr. Howard.

A thousand raspberry plants, consisting of two hundred each of Nemaha, Gregg, Kansas, Queen of the West, and Progress, have been set along the new pipe line just east of the arboretum. Heretofore raspberries have not proved a profitable crop on the College grounds, taking one year with another, but it is believed that by the use of a little water in very dry spells better results may be obtained.

F. C. SEARS.

## Notes From the Farm.

The feeding experiment comparing shorthorns with scrub cattle, that has been under way for the past two years, closed last month. The steers were sold to the Swift Packing Co. of Kansas City. These gentlemen at once took an interest in the experiment, and went through a very extended slaughter test with each steer, and likewise a block test. Neither time nor expense was spared to furnish the data for the College. The market was down a little at the time of sale. Three of the six shorthorns were in prime condition, and brought \$5.65 per cwt. The other three were put in the same class with the scrubs and sold for the same price, \$4.65. The steers had been on full feed for 161 days. During this time the shorthorns consumed 15,172 pounds of grain and 12,095 pounds of corn stover, and made a gain of 1951 pounds. For the same period the scrubs are charged with 14,666 pounds of grain and 6592 pounds of corn stover, and credited with a gain of 1674 pounds. At this year's price of feed, a pound of gain in the shorthorns cost 8.3 cents, and with the scrubs 8.49 cents. The grain was mostly ground wheat, with considerable corn meal towards the last. The gains during the two summers on pasture and the one winter in which they were roughed through, are in favor of the scrubs. From the last of May, 1893, to November 1st, 1894, the scrubs gained 3526 pounds, and the shorthorns 2473 pounds. The bulletin detailing this experiment will be out in two or three weeks, and will be of interest to parties raising and feeding stock. It will contain a photograph of each steer, taken at the close of the experiment, and the slaughter test will show how each animal dressed out, and the block test will give the percentages and prices of the different cuts. The block test shows that one of the scrubs had as valuable loins and ribs as the three best short horns.

The cotton-seed meal experiment is still being continued. The killing of the four shoats by feeding them a ration of one-fourth cotton-seed meal and three-fourths corn meal has been questioned by a good many. The cause of the death is assigned by them to something else besides the cotton-seed meal. The two large hogs that were substituted in the place of the four shoats that died continued to thrive on the same ration for forty-six days until fat, when they were sold. To further test the question two lots, of three shoats each, are being fed some of the same cotton-seed meal. One lot receives one-fourth cotton seed meal, and the other one-half cotton seed meal.

Not since 1886-7 has the college wheat been so completely killed out. Everything had to be plowed up this year. Even some that gave a fair promise in the early spring succumbed to later conditions.

The oats have been doing fairly during the dry weather and at present promise good results.

The ground has been rather dry for planting experimental corn, but all has been planted, and with the fine rain of the 3rd will come up nicely. Corn on ground subsoiled spring of '94, fall of '94, and spring of '95 is under experiment this year.

Fifteen acres of tame grass and clover, seeded this spring, is in fine condition for such a dry season. Being drilled in probably saved it from an early destruction.

Field peas have made an excellent growth for such dry weather. About four acres are under experiment this year, in different methods and distances of seeding. Last year those planted with oats were a total failure, but those drilled and given two cultivations gave a crop of 15½ bushels of grain and a ton and a half of hay. This is very good when we take into account that they were badly damaged by frost in May of that year.

F. C. B.

## COLLEGE ORGANIZATIONS.

April 27th.

The Hamilton Society was called to order by Pres. Painter. Prayer by S. Robbins. Reading of minutes. L. W. Wolfe was initiated as a new member. E. Emrick opened the program with a thoughtful oration on "Sectarian Schools, or Freedom of Opinion." Music, song "Two Little Girls in Blue" by W. I. Joss. B. W. Conrad accompanied on the guitar. In response to a hearty encore Mr. Joss rendered a solo. "Elevation of the Western Stage," a very humorous selection from Bill Nye, was read by W. L. Hall. The debate was now taken up—Question, "Resolved, that old maids have done more for human progress than have old bachelors." W. G. Cooper opened the affirmative by citing the great work in education, in hospitals, and in missions which have been and are now carried on by old maids. These women give up their whole life to the upbuilding of the human race. E. M. Haise opened the negative by citing the great work carried on by old bachelors. He cited mission-



aries, writers, as Pope and Whittier, and philanthropists, as St. Paul. H. F. Hatch further argued the affirmative by referring to various good works which owe their success to old maids, and further stated that old bachelors were absolutely worthless. R. J. Barnett brought forth several points for the negative, and closed by stating that the per cent of old maids ought to be materially reduced. The leaders closed their respective sides with brief summaries. The Society decided in favor of the affirmative. The program was closed by F. A. Dawley with a scientific essay on "The Evolution of the Modern Dress Sleeve." He proved by scientific reasoning that the modern sleeve has no relatives on this sphere, but is an abnormal species of balloon idea from a remote planet to which he hopes it will soon return. Nothing of importance came up under unfinished or new business. The Critic made a few remarks after which we adjourned.

J. W. H.

April 26th.

A very well rendered piano solo by Nellie McDonald, '91, opened the program of the Alpha Beta Society. Gertrude Havens led in devotion, after which the Society was admirably entertained by listening to a cornet solo, executed by Clate Rambo, accompanied by Harry Brown at the piano. Charlie Shull was initiated and his name added to the roll of membership. "Co-education" was the theme of an oration written and delivered by Elva Palmer in a style that only a girl could accomplish upon such a subject as this. Florence Martin read well a selection on "Starting the Clock." A remarkable essay entitled "Writing Essays" was read by Josephine Wilder. The Gleaner was written and delivered in a manner creditable to its editor, Bertha Ingman. G. L. Clothier, Inez Palmer, E. P. Smith, and Elva Palmer composed a quartette which rendered music in a most pleasing manner. Also a quartette formed by Nora Fryhofer, Elva Palmer, Grace Secrest, and E. A. Powell entertained us with sweet strains from stringed instruments. An extemporaneous speech on "Normal Courses" was given by H. G. Graves, after which the usual business was taken up.

M. A. L.

April 27th.

The Websters were called to order promptly at eight o'clock by President Steuart. Roll-call did not show the average attendance, but the rendering of the program soon showed that what was lacking in quantity was supplied in quality. B. F. S. Royer led in prayer. Under installation of officers the following members of the latent Board of Directors were installed: S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, and S. Nichols. The question, "Should the Industrial Departments of the College be run more from a business man's standpoint than from a theoretical standpoint?" was argued on the affirmative by G. C. Wheeler and F. H. Day; on the negative, by E. H. Webster and S. M. Strawn. The affirmative gave a brief review of the work in the different departments, and argued that there was too much theoretical work, and that the students did not get down to solid work on a business principle. They have no idea of profit and loss in connection with their work or of the market value of their products. The farm, shops, and printing office are run at a big expense, while if they were run on competitive business principles, they would afford more employment to students and become self-supporting. The negative claimed that as most of our industrial work here was instructive and experimental, it was impossible to conduct the departments on a profit and loss basis. If the departments were run on a strictly business principle, each student would confine himself to one particular line, and thus not obtain a general knowledge of the different industries, which a college education should give. Instruction should be the paramount ideal of our industrial system, and not a small matter of dollars and cents. The Society was next favored with a well rendered declamation by R. W. Bishoff, entitled, "Among the Alps." C. H. Lehmkuhl's essay, "Society," contained some very good history of our Society and prophecy for the future. The last issue of the Reporter under the "Old Regime," by T. W. Morse was excellent. Motto: "We should so exist that when we drop out of existence our friends need not spend the rest of their life-time filling up the holes we have left." Among the articles treated were, "An Un-Americanism," "Thoughts on the Ionian Exhibition," "A Rural Adventure," "Military Life at the K. S. A. C.," "The College Race Horse," and numerous notes on temperance and sporting subjects. After recess S. Nichols presented a well-written essay entitled "Looking Forward." Under unfinished business the trial of Mr. Selby was continued in true "Webster and Hayne" style, with S. M. Strawn as prosecuting attorney and J. B. Harman for the defense. Verdict, not guilty. Adjournment, 10:35, "when the lights went out." T. M. R.

### The Weather for April, 1895.

BY C. M. BREESE, OBSERVER.

A warm, dry month. The warm weather prevailing throughout the month advanced vegetation materially, although it has been very decidedly held in check by the still prevalent lack of rainfall. At the end of the month fruit prospects are first-class, excepting blackberries and raspberries. Oats have been slightly injured by the drouth, but promise well with favorable conditions from now on. Stock is all out in the pastures, and the grass is good, being almost as far advanced as is usual by the middle of May, but needing rain. Tame grasses suffered greatly from last season's dry weather, and with the exception of alfalfa are looking poorly. The corn planting season is much earlier than usual, over half the crop being now in, and much of it coming up.

Temperature.—The mean temperature was 59.33°,

which is 5.82° above normal. This has been exceeded but once in our thirty-seven year record, April, 1863, having a mean of 59.43°. The coldest April was in 1874, the mean being 46.76°. The highest temperature was 94°, on the 28th; the lowest, 31°, on the 2nd; a monthly range of 63°. The greatest daily range was 50°, on the 4th; the least, 5°, on the 6th. The mean daily range was 30°. The warmest day was the 20th, the mean temperature being 75.75°. The coldest day was the 1st, the mean temperature being 35.25°. The mean temperature at 7 A.M. was 50.23°; at 2 P.M., 71.97°; at 9 P.M., 57.57°. The mean of the maximum thermometer was 75.87°; of the minimum, 45.5°, the mean of these two being 60.68°.

Barometer.—The mean pressure for the month was 28.737 inches, which is .03 inch above normal. The maximum was 29.171 inches, at 9 P.M. on the 12th; the minimum, 28.049 inches, at 7 A.M. on the 6th; monthly range, 1.122 inches. The mean at 7 A.M. was 28.761 inches; at 2 P.M., 28.717 inches; at 9 P.M., 28.733 inches.

Cloudiness.—The per cent of cloudiness was 40. This is 3.3 per cent below the normal. The per cent at 7 A.M. was 35; at 2 P.M., 50; at 9 P.M., 35. Four days were entirely cloudy; five were five-sixths cloudy; three were two-thirds cloudy; one was one-half cloudy; two were one-third cloudy; four were one-sixth cloudy, and eleven were clear.

Precipitation.—The total rainfall was 1.46 inches. This is 1.18 inches below normal. This moisture was fairly well distributed throughout the month as five separate rains. There was a light fall of hail on the 5th and 15th.

The table following shows monthly rainfall for 1895, the normal, and departure from normal:—

	Normal.	1895.	Departure from Normal.
January .....	.78	.69	-.09
February .....	1.08	1.39	.31
March .....	1.31	1.20	-.11
April .....	2.64	1.46	-1.18
Totals .....	5.81	4.74	-1.07

Wind.—The wind was from the southeast, twenty-two times; east, seventeen times; north, sixteen times; south, thirteen times; northeast, ten times; southwest, nine times; northwest, two times, and west one time. The total run of wind for the month was 8363 miles. This gives a mean daily velocity of 278.77 miles, and a mean hourly velocity of 11.62 miles. The highest daily velocity was 702 miles, on the 5th; the lowest, 112 miles, on the 18th. The highest hourly velocity was 40 miles, between 8 and 9 A.M. on the 5th. The following tables give comparisons with preceding Aprils:—

April.	Number of Rains.	Rain in inches.	Per cent of Cloudiness.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858 ..	2	4.64	34	.....	51.66	87	30	.....	.....	.....
1859 ..	2	2.54	28	NW	49.43	90	22	.....	.....	.....
1860 ..	2	.12	28	NW	57.99	90	30	.....	.....	.....
1861 ..	1	2.00	34	S&SW	54.18	93	31	.....	.....	.....
1862 ..	6	3.63	48	N	49.48	78	31	.....	.....	.....
1863 ..	9	9.12	33	NW	59.43	93	39	.....	.....	.....
1864 ..	9	1.68	60	NW	47.52	79	27	.....	.....	.....
1865 ..	9	2.93	.....	.....	51.06	76	23	.....	.....	.....
1866 ..	3	2.44	40	N	49.72	75	31	.....	.....	.....
1867 ..	3	1.96	56	N	48.25	83	27	.....	.....	.....
1868 ..	6	2.20	42	SW	48.10	77	22	28.72	29.10	28.15
1869 ..	5	.50	45	SE	52.63	85	19	28.74	29.00	28.40
1870 ..	7	3.00	43	SW	57.07	91	32	.....	.....	.....
1871 ..	7	2.66	52	SW	56.42	89	30	.....	.....	.....
1872 ..	9	1.67	57	NW	47.31	91	23	.....	.....	.....
1873 ..	3	1.40	67	NE	46.76	84	24	28.75	29.14	28.33
1874 ..	7	1.60	44	NW	48.45	82	19	28.67	29.04	28.32
1875 ..	5	7.52	43	SW	53.58	84	26	28.72	29.16	28.36
1876 ..	6	4.08	48	NE	53.08	84	20	28.65	29.10	28.19
1877 ..	5	2.02	51	NW	57.77	85	27	28.50	28.95	27.98
1878 ..	8	3.21	52	NW	55.73	80	18	28.56	28.92	28.19
1879 ..	2	1.08	32	SW	56.79	89	30	28.53	29.02	27.88
1880 ..	6	1.56	57	NW	52.09	82	13	28.58	28.90	28.11
1881 ..	7	3.47	57	SW	56.14	86	32	28.59	28.99	28.14
1882 ..	7	2.36	54	SW	55.57	93	31	28.50	29.02	27.89
1883 ..	12	3.23	40	NE	49.47	85	27	28.55	28.91	27.95
1884 ..	5	4.03	44	NW	53.72	81	28	28.52	28.85	28.17
1885 ..	5	5.26	47	NE	54.51	88	18	28.83	29.26	28.02
1886 ..	7	2.85	33	SW	58.14	98	23	28.78	29.29	27.95
1887 ..	6	1.38	27	E	56.72	93	28	29.10	29.53	28.64
1888 ..	3	1.74	37	.....	55.27	92	26	29.03	29.41	28.47
1889 ..	5	1.74	40	E	56.25	93	26	29.01	29.39	28.38
1890 ..	5	1.86	35	NW	56.24	91	21	28.87	29.27	28.44
1891 ..	10	2.91	39	SE	51.69	85	26	28.79	29.27	27.95
1892 ..	7	1.28	34	NW	54.34	98	26	28.72	29.09	28.04
1893 ..	8	1.33	23	S&E	57.63	92	25	28.78	29.27	28.41
1894 ..	5	1.46	40	SE	59.33	94	31	28.74	29.17	28.05
1895 ..	5	1.46	40	SE	59.33	94	31	28.74	29.17	28.05
Sums ..	222	97.86	1516	.....	1979	7	689	13	.....	.....
Means ..	6	2.64	43.3	NW	53.51	.....	88.71	.....	.....	.....

### WIND RECORD.

April.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889 ..	7506	250.21	587	77	10.42	37
1890 ..	9577	319.23	710	103	13.30	51
1891 ..	7748	258.28	456	51	10.76	35
1892 ..	11196	373.20	963	134	15.55	49
1893 ..	10172	339.06	652	92	14.12	45
1894 ..	11233	374.43	689	102	15.00	45
1895 ..	8363	278.77	702	112	11.62	40
Sums ..	65795	2193.18	4759	671	91.37	302
Means ..	9399	313.31	680	96	13.05	43

It is a poor advertisement for agriculture as a profession when its devotees troop into an institute in stogy boots and everyday clothes, with the odor of the barnyard still clinging to them. The spectacle of a hundred or two farmers with linky hair, unshaved beards, and tobacco-filled mouths, at an institute, will wound the dignity of farmers deeper than as many essays on the bright side of farm life can heal.—Robert L. Dean.

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when added, are paid at the office of the Treasurer in Manhattan. All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka. The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums. Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

### MANHATTAN ADVERTISEMENTS.

#### BOOKS AND STATIONERY.

FOX'S BOOK STORE.—College Text-Books, School Stationery, Pencils, Scratch-books, Ink, etc. Manhattan, Kansas.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

LESLIE SMITH. College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

#### DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

#### CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

KNOTSMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

#### WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

#### DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

#### HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

#### DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

#### PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

#### MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

#### SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, Next door to Postoffice.

#### GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

#### PHYSICIANS.

INFIRMARY for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. SOLON D. ROSS, M. D., 523, 525, 527 P'tz Av.

### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



## NUMBER 35.

For the western farmer, and especially those who can irrigate, roots have some advantage over corn. As already noted, they are readily stored in pits in the ground, which thus obviates the building of silos, the only other alternative for dairymen who would have a succulent feed for their cows in winter. Again, they do not suffer from the hot winds as corn does, and although they may be stunted by a period of dry weather, yet they will grow again when rain



comes; points which will carry weight with many. That roots of all kinds can be successfully grown all over the State has been abundantly proved during the past two years in the sugar-beet tests reported upon in bulletins thirty-one and forty-three of this station. Let those who are so situated that they can take proper care of a patch of roots try one or the other of the kinds here referred to. Mangels will in most cases give the best yields, but as the tables indicate, they contain more water and consequently less dry matter than sugar beets. Mangels grow larger than sugar beets, and should be given more room. In all cases the ground should be deeply and thoroughly pulverized, and the rows should be far enough apart to admit of horse cultivation. The seed may be sown by hand or with a drill, and at the rate of about four pounds to the acre. When the plants are about three inches high they should be thinned by hand. Those pulled up can be planted where the seed has failed to germinate, if the ground is moist enough to start the plants. This will especially be practicable under irrigation. Spots in which the seed fails should be re-seeded as early as possible. It is absolutely necessary to keep the weeds down and the soil mellow throughout the growth of the crop. Weeding in the rows must be done by hand.

Rutabagas and turnips are apt to suffer more from destructive insects than do mangels or beets. On the other hand, a crop of turnips can be grown in a few weeks, late in the season, on ground from which an early crop has been removed. By all means try a root crop, but start in on a small scale.

### FLOWERS,

BY ALICE RUPP.

MAY is here, and again Dame Flora from over the sunny southern seas has landed on our shores with her beautiful and charming assortment of goods. How verdant the ship in which she sails! How rich and showy are her stores! A feast, indeed, for the imagination—"Poetry in the highest sense enlivened by sweetest music." We look and listen and wonder. It is like a fairy story or a vision "beyond the golden gates." Happily it is neither visionary nor the work of the wood nymphs, but a sweet reality—a special gift from the Father in heaven to us, his children on earth.

Dame Flora has her competitor; she finds him in the manufacturer who displays before the eager, covetous eye his artistic skill and ingenuity in all its rainbow tints and fleecy textures, yet how incomparable to Dame Flora's treasures. So come, fair sisters of the land, and let us avail ourselves of this opportunity. The Dame, unlike the manufacturer, is a very goddess of liberality, giving freshness and glow of cheek, brightness of eye, cheerfulness of temper, vigor of mind, and purity of heart, asking only in return early rising, industry, patience, and a small share of our time.

For this very small consideration we may have flowers, those sweet creatures of life and love and beauty and language blooming above, around, on every side, and even beneath our feet.

I regret to say that too often is the idea prevalent that, unless flowers contribute to the bread-and-butter side of life, or to the dress and the bonnet departments, they are worthless; money, strength, and time cannot be spent on them for their own sakes. How very stupid! Do they not rival in beauty the bric-a-brac, those superfluous dust collectors, which usurp every inch of available space in so many homes? What wonder that all the poetry has evaporated out of some lives, leaving only the dull monotonous prose. You feel cross with the world, everything has gone wrong, and you are prone to question, "Is life worth the living?" To answer yourself, cultivate a few flowers and note the transition. The human heart is put in direct sympathy with nature, and as the unfolding of each tiny leaf is in itself a divine lesson, the soul is brought into closer communion with the Maker. No room now for the seeds of discontent to grow, blossom, and yield an abundant harvest of fretfulness, uneasiness, and selfishness. True, it is none of my particular business whether or not you have a flower bed or two, but I do love to see the world look pretty, and as we are charged to "Do all the good we can, to all the people we can, in all the ways we can, just as long as we can"—it almost seems a sin not to do the little we can in this line to make this world a beautiful highway for the journey of pilgrims; a beautiful landscape to greet the angel's vision; and a beautiful "Eden to return to the Lord, lovely as the Paradise he lent to us in the beginning."

Therefore, my dear sisters, don't be afraid to put both money and trust in flowers; they will abundantly repay you—yea, with interest compounded for all

your painstaking. Do we hear some one draw a long breath, sigh and say: "What is the use in my trying to raise flowers? I never have the luck Mrs. B. does;" while others exclaim, "O, I have no time to fool away flowers."

"Luck," did you say? Why, luck is but the natural result of the close and careful attention to the little things. Do you cautiously guard your plants that none of the insect pests deposit eggs and rear their young on the underside of the tender green leaves? Are the weeds allowed to grow and thus choke the frail plants, as well as deprive them of the nourishment from the soil, the warm sunlight, and fresh air? If the season is a dry one, as often occurs in Kansas, are the flowers watered as often as necessary to provide sufficient moisture? Too much trouble? Well, herein lies the secret of Mrs. B's success and your ill luck.

As for time, a few suggestions may prove to you that you have some time which might with profit be spent in the cultivation of flowers.

How many hours during the course of a week are spent in calling, merely for the sake of being sociable or indulging in light, frivolous conversation? After an afternoon has thus been spent, how often have we heard from the tired, weary victim the ejaculation, "There, I'm glad that's over!" proving that the task, social obligation, or whatever you may desire to term it, is unprofitable and many times unpleasant. Why not abbreviate them, calling only upon those persons whose friendship is truly desirable?

Much of that valuable time for which some people are constantly yearning is positively wasted in reading. Shocking! but none the less true. Many hours these pleasant days are spent in poring over a certain class of novels which are no doubt very interesting, and although not harmful in themselves do weaken the intellect, stimulate the passions, and lower the high standard of morality. The study and cultivation of flowers has a refining influence upon the mind; close companionship with them never produces listless, pale-faced, fragile girls; so gentle reader, give the time spent with some hero and heroine, wandering through the intricate and impossible things of life, to the flowers. Throw off your delicacy, put on gloves if you must, but "play in the dirt" till you are a creature of animation; till the brain becomes cool; the nerves relaxed from their unnatural tension, and the cheeks vie in color with the roses you cultivate.

Again, much time is spent in unnecessary needle-work, over-taxing body and spirit, with a final result that will afford but little pleasure, and that to a very select few. Reference is not made to dress—for is not this the era of simplicity, neatness, and utility in fashioning the gowns?—but to that other phase of needle-work, "fancy-work," as it is more frequently termed. These bits of "nervousness" look very pretty on dinner-table, sideboard, dresser, and stand; but would not a bouquet of fresh flowers on the carefully laundered, pure, plain linen be just as sweet and dainty, thus leaving a large proportion of your time to be utilized in making the world more beautiful? We would not have home barren of the artistic as it would then "cease to be the place where all sweet affections are brought forth and nourished, the spot to which memory clings the most fondly, and to which the wanderer returns the most gladly." On the contrary, we would have the home converted into a little Eden of grace and loveliness, and one of the ways to do this is to select, arrange, and care for plants and flowers.

Here, as elsewhere, the artistic taste should be with in call. When painting a landscape the artist is careful to select some sombre color for a ground-work upon which he places the delicate shades and colors in a way that will show, to the very best advantage, his skill and ingenuity. This same tact should be transferred to the out-of-door landscape wrought of the living, breathing colors. Let nature's soft, velvet carpet of rich green be the foundation to rest the eye from the brilliant colors of some flowers, the neutral tints of others, or the snowy whiteness of still others.

Do not try to have everything, as too many flowers in a small yard produce the same effect as an over-trimmed gown or bonnet, or a table loaded with the fruits of the season. "Cut your garment according to your cloth," likewise select your plants for your ground and yours alone. Your yard may be small, while Mr. B's grounds are spacious, therefore what is artistic and beautiful in his landscape, would be out of taste and unbecoming on the small canvas where yours must be grouped. Choose wisely and judiciously, then have such a happy blending of shades and tints that the effect will be one of unbroken harmony, like the master touches of music in which there are two thousand sweet melodies blending their silvery voices into one enraptured strain.

In your planting, forget not the trees. Be it one or be it many, be sure and plant them, that the birds may have somewhere to build their homes, and beneath the shade of which the tired body may rest while the soul luxuriates in the melody of songs and the sweet scent of roses and myrtle wafted delicately on the balmy air.

Do you not see that each one has some time and money that might be expended in the cultivation of flowers? They repay you. Physically there can be nothing better; the early rising, stirring of the soil, the pure, fresh draughts of morning air, and the invigorating sun-baths will bring more color to your cheeks than all the medicine the doctor can prescribe or the druggist compound.

Then, again, do they not largely pay in affording you constant, though ever new and varying beauty for your own enjoyment, for the entertainment of your many friends, and for the weary stranger who passes your door? Is not the breakfast more palatable for the bright flower which smiles from each plate its happy good morning? The dinner, despite the "French menu," handsomely embroidered napery, costly silver, and fine china, is incomplete without the sweet fragrance and charming beauty of flowers. We find them adorning the bride, cheering the sick, and watching over the grave, when those who should be there have long forgotten the sleeper.

Who can become intimate with these exquisite touches of the Master hand and not feel the heart grow better, the affections purer, and the desire for heaven more ardent? Then, who cannot afford to reap that which is within the reach of all? If any there be who discard flowers as unworthy her notice, does she not, in actions—which sometimes speak louder than words—proclaim herself superior to her Master?

"Flowers are the delicate workmanship of our Creator: and through his noblest worthies has He immortalized them in song. Flowers afford suitable patterns for the imitation of high heaven—born art in that grand temple whose architect was God. Flowers were wreathed with everlasting honor into the beautiful smiles of that great poet who with one mighty stroke disenthralled the world. Flowers are our kindred ties. From the same natural dust we sprung, and to the same we shall return. Who that has a human heart, a pure, refined, ennobled soul, does not care for flowers?"

"A garden," says an eloquent writer, "is a beautiful book writ by God's own finger. Every flower and every leaf is a letter, and you have only to go on joining these together into words and sentences, until you find yourself carried from earth to heaven by the beautiful story you are going through."

### Maintaining Soil Fertility.

Fertile and seemingly inexhaustible as the soil of Iowa appears to the average farmer of today, the time may not be far distant when he will awake to the fact that it will no longer respond to his demands. He will certainly find he can no longer tickle the soil and hope to have it laugh with a bounteous crop. He will have to apply a stimulant. Indeed, such is already the case, except with the newest and most fertile lands. The farmer of today cannot hope for as large a yield as he could twenty years ago. The following figures, in round numbers, compiled by Prof. Georgeson, showing the average yield per acre for a series of years, ought to call attention to our agricultural condition:—

The average yield of corn per acre in Iowa for the ten-year period, beginning with the year 1868 and ending with 1877, was 34 bushels. The average yield per acre for the ten-year period, beginning with 1884 and ending with 1893, was 31 bushels, and, if we were to include the crop of 1894 in this mean, we would have an average much less. The average yield of corn in Iowa for the five-year period, beginning with 1867 and ending with 1872 was 37 bushels. The average yield of corn per acre in Iowa for the five years, beginning with 1888 and ending with 1893, was 33 bushels. The average yield of corn per acre for the entire corn-producing States of the Union for the ten years, beginning with 1868 and ending with 1877, was 27 bushels, while for the succeeding decade we have the average reduced to about 25 bushels.

The average yield of oats in Iowa for the decade ending with the year 1877 was 29 bushels, and for the succeeding decade only 24 bushels.

Wheat does not show as well-marked a decrease, probably from the fact that wheat in Iowa is more apt to alternate with other crops, or else is sown on new land. But even wheat shows a slight decrease for the same periods.

Of course, any series of short periods will not show a uniform decrease in the average yield, because soil exhaustion is not the only factor to be taken into consideration. Many other causes may enter into crop production. An unusual succession of unfavorable seasons, drouth or floods in any particular decade, would materially modify and vitiate the results as far as a comparison extended. Likewise a succession of

(Continued on page 144.)



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address E. D. Stratford, Loan Commissioner, El Dorado, Kan.

**GENERAL LOCAL NOTES.**

Rev. R. M. Tunnell led in Chapel exercises Thursday morning.

Miss Lulu Burnham of Topeka is visiting with Miss Kimball.

Prof. Hitchcock spends two days this week botanizing in Logan County.

Hilda Leicester drops out of the Third-year Class to clerk in the Manhattan postoffice.

President Fairchild lectured before the Shawnee County Teachers' Association last Saturday on "The Art of Composition."

Candidates for graduation in the County High School have been making good use of the College library for several weeks past.

The Museum is indebted to Mr. John Metler for the gift of a Florida alligator, alive and in good health. It measures thirty inches in length.

The Webster Quartette furnished a large part of the music at the entertainment given in the K. P. hall Thursday night by the G. A. R.

Regent C. R. Noe has resumed the publication of the *Leon Indicator*. He speaks a good word for the Agricultural College—the invariable result of a visit to the institution.

Mr. Baxter's return to duty in the greenhouses after a severe attack of rheumatism makes glad the hearts of all whose duty or pleasure takes them to the land of posies.

President Fairchild attended a meeting of the State Board of Education at Emporia, on Thursday and Friday, and briefly addressed the Training Class at the State Normal School.

Recent additions to the Library are two volumes of Kansas public documents, the report of the Commissioner of Labor for 1894, and the Biennial Report of the State Board of Agriculture.

Mrs. J. C. Mayos and children of Clay Center were conducted about the College and grounds Thursday by Mr. and Mrs. Davies of this city. Mr. Mayos was foreman of the College Farm some years ago.

The College welcomed to Friday afternoon exercises, Mr. and Mrs. Newell, Miss Whitford, A. D. Rice, '92, Nora Newell, '93, John Stingley, '94, C. C. Smith, '94, and Louise Stingley, student in 1893-4. We have room for all the friends who come.

The Manhattan Choral Club, assisted by the Amateur Orchestra, the College Cadet Band, and the Ionian Mandolin Club, will appear in a May Festival at the Opera House next Friday evening, May 17th. Prof. Brown is Director. A rich program has been prepared.

Owing to a change in his plans, Supt. Knipe has been released from his engagement to the normal institute and Prof. O. E. Olin will take his place. Prof. Olin needs no introduction to the teachers of this county. His influence and his work will add much to the success of the institute.—*Riley County Educator*.

Rev. F. E. Sherman, Principal of the Stockton Academy of Stockton, visited the College one day this week in company of Rev. R. M. Tunnell, and during chapel exercises in a few brief remarks impressed upon the students the necessity of educating the soul as well as the hands and mind, as he saw it carried on at this institution.

Messrs. Elmer and Bert Chromister of Dickinson County visited the College on Monday. One is a graduate, and the other a student, of the County High School. They were highly pleased with the College and its work, and hope sometime to avail themselves of the opportunity offered here for the higher education of young men from the country.

The Fifth Division of the Third-year Class presented orations in chapel Friday afternoon as follows: "Three Worlds," F. E. Uhl; "Vivisection," H. G. Johnson; "Work for Women," Elda Moore; "Fate of the Indian," T. L. Jones; "When Woman Reigns," Sue Long; "The Criminal and his Treatment," E. C. Joss; "Prohibition in Kansas," A. C. Havens; "Power of Conscience," Sadie Stingley; "The Work of the Private Detective," Clara Newell; "The World's Poet," L. W. Hayes. Music was furnished by the Cadet Band.

St. Paul's Episcopal Church was crowded Sunday evening at the funeral of Mrs. Cavanaugh. The beautiful service of the church was conducted by the Rector, Rev. Mr. Brady, and President Fairchild spoke briefly. The Faculty of the College attended in a body, and occupied seats on the chancel. The funeral cortege left on the five o'clock train Monday

morning, many friends and the officers of the battalion attending it to the train. Pres. Fairchild and Prof. Georgeson went with Capt. Cavanaugh and family to Leavenworth, where Rev. Mr. Brady, assisted by Chaplain Pierce, read the burial service at the memorial chapel. The body was laid by attendant friends in the beautiful cemetery. Capt. Cavanaugh, with his son and daughter, returned with Mrs. Cavanaugh's mother and sister to Topeka.

A division of the Fourth-year Class appeared in Chapel on Friday afternoon of last week in the following program: "From Rainbow to the Tar Bucket," F. E. Rader; "Flowers in History," Cora Stump; "Religion vs. Science," B. F. S. Royer; "The Monarch Man Milliner," Ora Yenawine; "Trip to Mars," R. W. Rader; "The Position of Women in America," Mary E. Willard; "Man vs. State," C. B. Selby. Messrs. C. W. Lyman and Harry Brown rendered a very pleasing selection on mandolin and guitar.

**GRADUATES AND FORMER STUDENTS.**

E. W. Curtis, Third-year in 1888-9, is manager of a creamery at Papillion, Neb.

W. P. Tucker, '92, writes from Rock, Cowley County, of continued interest in his Alma Mater.

A. D. Rice, '92, and Jno. Stingley and C. C. Smith, '94, attended chapel exercises yesterday afternoon.

Harriet Dodson, Second-year in 1891-2, was married, April 24th, to Mr. George Hawes, of Wakefield.

Edith Stafford, First-year in 1891-2, visited College and friends Thursday in company of Hortensia Harman.

C. R. Pearson, '94, Superintendent of Public Instruction in Sheridan County, is made glad by the birth of a son.

Byron Kirkpatrick, who left second-year classes at the beginning of the winter term, paid the College a visit this week.

Clara Short, of Blue Rapids, student in 1886-7, was married, last Tuesday, to Mr. B. F. Means, of Stillwater, Oklahoma.

W. E. Smith, '93, having closed a prosperous year of teaching in the Heller school on Fancy Creek, spends a day now and then at the College.

A. J. A very, student in 1888-9, farming on Madison creek, near Wakefield, visited College Wednesday with his brother, who hopes to become a student next year.

C. H. Hinman, student in 1887-8, writes from Thorp, Washington, that he has been teaching for several years. He plans to attend the Washington State Normal School at Ellensburg next year.

C. J. Peterson, '93, visited College on Tuesday. He completed his third successful term of teaching in Wabunsee county last week. After the summer institute he plans to attend the National Educational Association at Denver.

D. W. Working, '88, is the father of the son of the Secretary of the Board of Agriculture of Colorado, and according to report has borne this pleasant responsibility for two months without the scratch of a pen to friends at his Alma Mater!

J. S. Hazen, '89, observer in the U. S. Weather Bureau at Des Moines, Iowa, writes for the *Iowa Homestead* a paper on "Maintaining Soil Fertility," which is reproduced elsewhere in this issue. What he says applies to Kansas as well as to Iowa.

The visit of W. W. Hutto, '91, with his St. George school, on Friday of last week, was overlooked by the local editors in the excitement of the big rain; which rain, by the way, in a measure spoiled the visit of both teacher and pupils, but all enjoyed the outing without getting wet.

Con M. Buck, who had to leave the Third-year Class this spring to assist his father in farm work, writes from Oskaloosa that their corn is doing well, and that the apples, peaches, and pears are very fine. He expects to make up Geology during the summer and, being ahead in some studies, graduate with his class.

Geo. W. Smith, '93, the retiring President of Manhattan Epworth League, was pleasantly surprised on Monday evening by a visit from the members, who brought with them refreshments; and having, with the help of George, disposed of them, the newly elected President, Ruth Stokes, '92, after a neat speech presented the victim with a beautiful League badge.

John Brookins Brown, '87, writes from the Ponca Agency, Indian Territory, that he has been teaching the young Indians for some time not how to shoot,—they understand that quite well,—but how to spell and reckon. He likes the work, and describes the Indian as fairly bright and well behaved. Next summer he hopes to shake hands with his old friends of the College at the National Educational Association at Denver.

The Model School to be held in connection with the Riley County Institute will have among its teachers three of our graduates who are winning a reputation as teachers of more than ordinary ability. Elizabeth Edwards, '92, taught in the school last year, and her re-employment testifies to her worth. Of the other two—W. E. Smith, '93, and Jennie R. Smith, '94, the *Riley County Educator* says: "Mr. Smith's work in this county has shown him to be an excellent teacher, possessed of tact, energy, enthusiasm, and ability to lead pupils to think and to express their thoughts,—the two essentials in teaching. Miss Smith's work

during the past year has been very satisfactory along all lines, but especially in primary and intermediate classes. Her work in training to read with expression is especially commendable."

**The Kedzie-Winchip Senior Party.**

At the invitation of Mrs. Kedzie and Mrs. Winchip, the Class of '95, save a few, assembled at the residence of Mrs. Winchip Friday evening from where they were to start for Tan y Bryn, the home of Mr. and Mrs. Jonathan Davies, to spend the evening in the first Class party of the Spring Term. The conveyances, consisting of four hayracks upholstered comfortably with straw and lap robes, transported the gay Class, members of the Post-graduate Class, Professors Olin and Jones, and Misses Harper and Rupp in a way that made all hearts light, and brought back to many pleasant reminiscences of rural life. Space forbids mentioning the numerous amusing incidents of the ride, so valuable a recreation was it to the thesis-tired minds of the Fourth-years. At the journey's end a luncheon of coffee and sandwiches was served, much to the delight and gratification of all, since they had started from the city ere the Club house bell rung for supper.

Being thus refreshed, all engaged in an informal social chat, such as comes so natural after spending together four years of school life. Programs bearing the following topics for conversation were distributed: Gossip; Music—The "Ag Band;" Girls—How to Please Them; Commencement Exercises; Books—Your Choice; Reminiscences; Sweetness Long Drawn Out; Boys—How to Manage Them; Your Life Work—What is it to be? Moonlight—Its Best Use. All numbers were soon filed, and with Mrs. Winchip as timekeeper the conversations were begun, lasting five minutes for each topic. The subject "Sweetness Long Drawn Out" was practically supplemented by maple sugar taffy on ice being passed around to the conversers. This program completed, a second course, consisting of hot biscuits, butter, and genuine maple syrup, sent by Dr. Kedzie direct from Michigan, was served. As is characteristic of the Class, their part was well done.

A half-dozen gathered about the organ, and song for a few minutes filled the rooms. Then Mr. Davies and his son Tom favored the guests with a few selections of Welsh songs, a treat, indeed, and appreciated by the boys and girls, as was shown by the earnest applause.

Short had seemed the time when twelve o'clock came around, but with thanks to Mrs. Kedzie and Mrs. Winchip for the royal manner in which they had been entertained, to Mr. and Mrs. Davies and to their classmate Tom, for their kindness and hospitality, they took their departure with a feeling that anticipations had been far exceeded. C. A. J.

**Shop Notes.**

Classes in the shops this term are not so large as Fall and Winter classes, due largely to the fact that Second-year students take their required industrial on farm and garden.

Parts of the appropriations which came under control of the Mechanical Department have been already used for their intended purposes.

The sewer from Science Hall has been extended down to the pasture, some 450 feet; and a drain put in from the boiler room to the pasture southwest of the steam plant, about 450 feet. The work in these drains was chiefly done by students.

The appropriations for new tools in the Shops have been expended for a No. 2 Universal Milling Machine built by the Brown, Sharpe Co., Providence, R. I., and a Universal Tool and Cutter Grinder, built by the Norton Emery Wheel Co., Worcester, Mass. Both machines are valuable acquisitions to the Shop equipment, and have already been found very useful.

Work on the extension of the steam line to the Armory begins this week. The tiling and other material for the line have been on the ground for several days, and only the pipe is delayed. For the conduit, 20-inch sewer pipe is to be used. They are broken in halves lengthwise of the pipe and will be put together with cement when the steam pipes are in their place. The steam pipes will be encased in asbestos pipe-covering to prevent radiation along the system as much as possible.

Work is also under progress in putting in the radiating coils in the Ironshop and Foundry, which, when complete, will make the shops much more comfortable for the boys next winter.

Another run will be made in the Foundry Saturday. Manhole rings, forge pans, and numerous small castings for the extension of the steam plant are among the articles set up.

In the carpenter shop mouldings are being got out for the electric wiring of the chapel.

Several models of intersections of solids have been made lately for the Drawing Department. These required considerable work and study to lay out properly. For instance, the piercing of a triangular prism by a triangular pyramid; the making of an icosahedron, 20 sided; polyhedrons, etc.

The iron shop is in great need of a suitable wash room and clothes locker where students can put on the blacksmith's uniform of overalls and jumper in a little more seclusion than is afforded by the passage way between the iron shop and engine room. E. H. W.



## COLLEGE ORGANIZATIONS.

**Student Editors.**—Hortensia Harman, C. A. Johnson, J. V. Patten  
**Alpha Beta Society.**—President, Nora Fryhofer; Vice-President, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon. Admits to membership both ladies and gentlemen.

**Webster Society.**—President, W. H. Stenart; Vice-President, J. B. Harman; Recording Secretary, J. C. Wilkin; Corresponding Secretary, T. M. Robertson; Treasurer, J. E. Trembly; Critic, E. H. Webster; Marshal, A. G. Wilson; Board of Directors, S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, S. Nichols. Meets every Saturday evening at 8 o'clock. Admits to membership gentlemen only.

**Hamilton Society.**—President, W. H. Painter; Vice-President, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, L. A. Fitz; Board of Directors, E. C. Joss, S. Robbins, F. B. Yoder, C. D. Adams, V. Maelzer. Meets on Saturday evening at 8 o'clock. Admits to membership gentlemen only.

**Ionian Society.**—President, Flora Day; Vice-President, Mabel Selby; Recording Secretary, Minnie Pinbom; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Critic, Hortensia Harman; Board of Directors, Laura McKeen, Dora Thompson, Mabel Selby. Meets Friday afternoon. Admits to membership ladies only.

May 4th.

At eight o'clock President Painter called the Hamiltons to order. Prayer, C. E. Pincomb; reading of the minutes, L. D. Walters was initiated. A quar consisting of C. D. McCauley, M. G. Spalding, L. W. Hayes, and E. C. Joss opened the program with a parody on the "Bull Dog." The selection called forth much laughter and applause. The singers were heartily encored and responded with an original parody on the same selection. This was even more highly appreciated than the former. Following this was an essay on the "Manufacture of National Bank Notes" by C. E. Copeland. C. S. Evans delivered an oration entitled "Is our Present Prison System a School of Reform?" The speaker severely criticized the prison system. Placed as they are old and young together, the speaker maintained that the present prison is a school of training from which expert criminals graduate. L. Fitz next discussed the Haskell Institute. E. P. King delivered an interesting declamation, "A Social game of Poker." C. K. Peck read an amusing article entitled "Rural Opinions of Millionaires." The debate on the question, "Should our industrial be elective throughout the course?" was affirmed by J. J. Johnson and A. D. Coe and denied by C. D. Adams and Keeley. Many good points were brought forth by both sides. The affirmative maintained that with the present arrangement there is very little inducement to develop along a special line, that less interest is shown than would be under an optional system. The negative held that the present industrial arrangement is admirably adapted to carry out the objects of the institution, and this is the paramount consideration. The program was closed with an interesting edition of the Recorder by J. W. Pursel. The following are some of the articles: "A Tribute," "Beautiful Things," "Our Relations to the Faculty," and "Hayseed Kid." Under unfinished business several committees reported. Nothing of importance came up under new business. The critic made a few good suggestions, after which we adjourned.

J. W. H.

## Lessons of the Drouth.

Of the immediate effects of last season's drouth the reader probably had too much experience to care to hear anything further concerning them than has already been abundantly written. It is a good thing to forget. Some of the remoter effects, however, are worth noting. One of these is a marked subsidence of the "good roads" agitation. A year ago and for some time prior thereto good roads formed the subject of a large part of the discussion in the press and at gatherings of the kind in the West. The roads of the West, however, are always good in seasons like the last. It is only years when rain is abundant that the good roads' problem much concerns the public. Then the people mire down and feel the necessity of "mending their ways." No such necessity has existed during the past year, and bad roads are not therefore felt to be so crying an evil as they were. The natural method by which the roads have been put in a condition that has removed all complaint affords a valuable suggestion 'or the treatment of the evil when it again becomes an evil. Water seems to be the basic cause of bad roads, and the suggestion which last season furnished is to get rid of the water, or in other words, the fundamental idea at the bottom of the good roads problem in the West is thorough drainage.

Another of the after-effects of last season's drouth is the amount of sickness it has caused. This has been so great as to lead to special mention of it in a paper on "The Health of the People" in the April report of the statistician to the Department of Agriculture. Weather conditions do very largely effect health. A very wet season produces specific effects of one kind, while excessive drouth is the cause of another kind, even more dangerous. The particular effect mentioned in the paper just referred to is one that has been brought to the attention of the department by many western correspondents, and is that the streams were gradually lowered and that drinking water became impure. While in the New England States but two correspondents mentioned typhoid fever as a prevailing disease, and but one reported diphtheria as prevalent, one hundred and nine in the Western States report typhoid and sixty-six diphtheria as being strikingly prevalent. In the Middle States, also, the number was low compared with the West, but ten report typhoid fever and seventeen diphtheria as the prevailing diseases. These correspondents represent counties. The suggestion or lesson to be drawn from this after-effect of the drouth is that in dry seasons it is especially necessary to look after the purity of the water supply.—*Live-Stock Indicator.*

## Maintaining Soil Fertility.

(Continued from page 142.)

remarkable good crop years would destroy or at least modify the value of such figures as illustrating the decreased production. But the very fact of a decrease, be it ever so slight, in production of our cereal products should be sufficiently startling to cause the intelligent farmer to give the subject more than casual attention.

The fact of a general decrease in the fertility of Iowa soil, as shown by the decreasing production, seems to point conclusively to the fact that Iowa's tillable land is rapidly nearing the condition of fertility that already exists in the soils of Germany, France, England, and the eastern portion of the United States—a condition that necessitates the burdensome use of artificial fertilizers to produce crops of any kind.

A fortune awaits the man who first makes practical some economic method of preventing or checking soil exhaustion. A system of crop rotation which will give back to the soil elements drawn from it by previous crops and restore the waste of other years, appears to approach nearer a solution of the problem than any other plan suggested. The farmer, by planting his fields to the crop which requires the least amount of the particular element of which his soil has been denuded, can raise a crop without more than the ordinary expense attached thereto, and at the same time see the fertility of his soil restored by the action of the growing crop. It is a well-known fact that all soil contains a much larger amount of insoluble plant food than it does of the elements that are ready for assimilation. I venture the assertion that could one-half the elements of plant growth contained in the most barren farm be converted into a soluble form and rendered fit for immediate assimilation, this farm would yield the rankest growth of vegetation ever seen.

Now, it would appear that the principal object of the farmer should be to break up and unlock, as it were, the soil containing the elements of plant food in such abundance, but which are useless as long as they remain in an insoluble form. This breaking up process, or the breaking down of the soil, is best accomplished by nature herself. The action of the weather, winds, rains, thawing and freezing, the general disintegration and the action of plant growth, all tend to liberate the imprisoned plant food and render it free to be assimilated when the proper time arrives. Where and how do plants obtain their food? The elements of plant food are of two classes, organic and inorganic. To the first class belong those substances which are derived from the air, water, and from decayed organic matter. This class includes the various forms of ordinary manures, the different forms of carbon, hydrogen, and nitrogen. The second class includes the various mineral and ash-like substances, such as potash, lime, phosphoric acid, sulphuric acid; in fact, the greater part of plant food.

Now, it can readily be seen that if you will plant your land to some crop which does not require a large amount of the particular element of which your soil is lacking, you will get a comparatively large crop, while at the same time nature is laboring to restore the fertility of your exhausted soil by the disintegrating process spoken of above.

Corn draws a large amount of potash from the soil; wheat and oats draw an excess of nitrogen; the grasses, clover especially, a large excess of phosphoric acid, but it is claimed by many that clover does not impoverish the soil. Those who assert this believe that clover gives up more to the soil in the shape of plant food, which its roots liberate from the soil, than it takes from it. Potash, phosphoric acid, and nitrogen are the elements which first become exhausted from ordinary soils. It has been estimated that sixty bushels of corn will take from an acre of land two hundred pounds of potash, one hundred pounds of nitrogen, and fifty pounds of phosphates.

When we come to consider this fact, it is not to be wondered at that constant cropping of soil with corn will rapidly impoverish the most fertile lands we have. The only way to escape the utter impoverishment of our soil is to use artificial fertilizers, or the soil must be given a chance to restore its fertility by some system of crop rotation. Very few farmers in Iowa are able to allow their land to rest for a series of years, and to restore a worn-down farm by the application of manure is an expensive and laborious operation; so far as the purpose of this article is concerned, it seems to me that all farmers who farm intelligently will eventually be compelled to adopt some system of crop rotation as their only salvation.

The elements that are lacking in the soil can be determined by observation and experiment. For example, while we know that corn draws from the soil a large excess of potash, if corn has followed corn for years on any particular field, it is safe to assume that the amount of potash is becoming exhausted, and that if this field is sown to clover or some cereal which does not draw so largely on the supply of potash, the land will have a chance to restore its fertility and at the same time return a crop to the owner. Our agricultural colleges and experiment stations are here for the benefit and education of the farmer, and on their suggestions and assistance in analyzing the soil the farmer can rely.

I do not advocate any particular system of rotation. That must be decided by the individual; but, since in Iowa corn is the staple of our crop, I would suggest the following as a system that has been tried and deemed successful for northeastern Kansas: Starting with virgin soil, or prairie, the first year it would be sown to flax, sod corn, or millet; second year to wheat; third, fourth, and fifth years to corn; sixth year to oats and such miscellaneous crops as seem applicable. Then seed to grass (clover and timothy preferred) and allow to stand three years. Then the same series can be repeated with such modification as will suit the individual.—*J. S. Hazen '89, U. S. Weather Observer, in Iowa Homestead.*

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#### SOIL MOISTURE.

BY PROF. G. H. FAILYER.

INCIDENTAL to the prevalent discussions of the various phases of the irrigation question, the subject of saving the soil moisture is receiving considerable attention. It is interesting to note the various sides from which such subjects are approached, and the various conclusions reached, depending on the writer's point of view. Such diversities are to be expected, and great good on the whole comes from such exchange of experiences and opinions; for although each sees the subject from his own side, this interchange of views makes each somewhat conversant with the subject as a whole. This fuller acquaintance he would never get by his own unaided experiences. It is from earnest, intelligent observation and discussion that the advancement of farming interests must come. So we may expect only good from the discussions now occupying so much space in agricultural and country papers, upon the subjects of irrigation, conservation of moisture, etc.

While the subject of how to supply plants with the proper amount of moisture is one as a whole, it takes as many phases as the different persons handling it. There are, in fact, many distinct factors that go to make this one general result. A proper and full treatment of the subject would include all of them, but it is often convenient to classify and to deal with one at a time. One writer thinks only how to get water on the soil. He is inclined to say that all we want is water. The rest is an easy matter. Another thinks the preparation of the soil is the all important thing. He would subsoil and plow deep, thus preparing a deep bed of earth to hold the water and the plant food and give the plant roots room to expand and amplify, so that the crop will have a large area from which to draw its supply in time of need. Another would strive by methods of cultivation to retain any water that falls upon the soil of his fields or that may be put upon it by irrigation. He observes the loss of water from throwing up the fresh earth to drying winds by deep cultivation, and the evident distress of plants from this cause, and from having their roots disturbed and broken at a time when under the most favorable opportunities the plant is sorely pressed to sustain itself. Several other phases of the same general subject are dwelt upon with equal stress. No doubt there is much in what any one of these may say on his favorite theme. But all should be considered together. The question of how to save moisture in soils, and at the same time, if possible, bring the soil to the condition that excess of water does least damage, is far broader in its application than that of bringing water upon the soil. There are many sections where irrigation will not be practiced, where rainfall is usually sufficient for the needs of crops, but which suffer at times. How to economize in the use, or rather waste, of the water in the soil, when such times come, is an important consideration. Methods of preparing soil and of tillage that will serve to keep the soil in the best condition, are then of great value in all sections—in those where rainfall is generally sufficient, and in those where irrigation must be resorted to. But it would seem to be of greater importance where water in soils stands for an outlay of money or labor, or both. Where water has cost nothing, but has fallen from the clouds, one may be excused for letting it escape in wasteful ways, perhaps, but certainly no such waste can be afforded where water costs something. The water in either case should be made to go as far as possible in growing crops.

Deep and thorough opening up of the soil is a first requisite on many soils. But here discrimination must be used. Close, compact soils will repay opening up, by the subsoil plow if need be. On some soils, green manuring or applications of well-rotted barnyard manure would be useful in improving the texture, to say nothing of their effects as a fertilizer. In seasons like this the harrow should closely follow the plow. Soil thrown up roughly dries out rapidly and becomes cloddy. The harrow and the leveler or roller should be used at the close of each day's plowing. The difference in the loss of water from soil thrown up roughly by the plow and from that which has been harrowed and planked is certainly considerable, although I have no figures upon the subject. Surface tillage at the time when crops are suffering most for water will serve to reduce loss by evaporation.

These methods are all being urged for adoption by men who would improve their farm practice. They have been abundantly justified by experience in

practical operations as well as more exact experiments. We may confidently expect that as greater study is given to soil physics because of the prominence it is assuming in irrigation investigations, that our knowledge of how to save the water of our soils will be greatly increased and that the importance of such measures will be so fully demonstrated that none will question it.

#### THE FARMER'S BOY, AND HIS OPPORTUNITIES.

BY J. J. FRYHOFFER, '96.

THE world in general has a great deal to say in regard to the youth who are the sons of "the tillers of the soil."

The reason for this is obvious. The agricultural interest of the country is of paramount importance. We look with confidence to a people who are agriculturally inclined. Hence it is that the world cannot but take more notice of the youth on the farms than elsewhere.

The surroundings of the farm boy are the most natural to be found. It would seem, therefore, that the highest ends could be attained on the farm. This has been demonstrated over and over again in the lives of our greatest men. They were those who in their youth were trained to plow the furrow, sow the grain, and reap the teeming harvest.

And so the statement will produce no surprise when we say that the men who have done the world the most good could look back to the farm as their training school.

The boy on the farm is apt to think his opportunities for improvement are not nearly so great as those of the boy in the city with no particular tasks or employment. But a little study on the part of the farmer's boy will reveal the fact that the fields for the gathering of information are largest around himself. His observing nature, if properly trained, is a magnet that draws him into boundless fields of thought and investigation. As he turns up the mellow soil he may be thinking of its origin; and when he has leisure moments he can be improving the time by consulting the works of scientists upon the subject. As he strolls over the meadow, he may be observing the flowers as carefully as would the botanist. When out on the hills, he can read the earth's history in the rocks and ravines. In fact, he can always be in such an observing state of mind as to glean from the great field of Nature those truths and laws which constitute the fundamental principles of all science and art.

The training of the boy on the farm gives him a peculiar advantage over the city boy. He has learned that the tasks of the day are a necessary part of his general surroundings. And so, when leisure moments do come, he is fully able to appreciate them. But it is true that he often makes the wrong use of this spare time. Instead of storing up knowledge, he thinks the time is so short that any attempt at information-finding would result in little accomplishment. But he forgets that these moments, though small in themselves, may go a great way in making our lives of such importance that the world will recognize it.

And so we may continue to look toward the farmer's son as one surrounded with that environment which tends to make the most of men. And we must bear in mind that as a general rule the boy has found this out, and is endeavoring to make the most of his opportunities.

#### BEAUTY IN THE COMMONPLACE.

BY PROF. O. E. OLIN.

"A primrose by a river's brim  
A yellow primrose was to him,  
And it was nothing more."

THE sense of beauty is, perhaps, the most enjoyable of all the esthetic feelings. Grandeur produces an intense emotion; it rouses all the nobler faculties of the soul and fits them for great action. Sublimity hushes the soul to silence and leaves it only the power to wonder or adore. But beauty satisfies. It rouses the mind to a pleasurable excitement, and that excitement it fully gratifies. Grandeur is for occasions; sublimity is for rare moments; but beauty is "for human nature's daily food."

Although beauty enters, seen or unseen, into our daily life, we are apt to associate it only with what is high, or unusual, or distant. The Alps are majestic; the skies of Italy are fair; the "castled Rhine" is beautiful; but the portion of earth bounded by our horizon is entirely commonplace. We are all troubled, more or less, with what may be called "far-sight." We do not realize that beauty may be made up of the



simplest elements, and be found in our commonest surroundings. Many of Ruskin's finest passages are to teach us this very fact. The most charming of word paintings is but description of what has been before our eyes a hundred times.

Nature well illustrates the simplicity of beauty. That which most delights us in form or color or brilliancy will be found in the simplest combinations. Nature takes a handful of soot and of clay and makes the sparkling diamond and the richly colored ruby. She condenses the vapor and rounds it for a dew drop; she crystallizes it as a snow flake; and she gives to each the same law to make it glisten in the light.

Nature sometimes takes her work apart, seemingly to show us with what simple materials she makes her effects, or to show what wondrous beauty may be hidden in a common thing.

A ray of sunlight is a very ordinary thing—useful, but otherwise not interesting. A raindrop falls in its path—and now it is a marvel and a delight. Was not its beauty always there? All through the summer nature bewilders us with her profusion of light and color; the succession of months is one triumphant march of beauty. But when October comes, she resolves it all before our eyes into the primary colors that have formed every picture; and we see only the red and the yellow of the fields, and the simple blue of the sky. The romantic nook becomes a leafy shade with grey rocks, a dash of color, and the gleam of water; and the picturesque itself is now so clearly seen that we almost feel that we could make it.

Beauty is all about us. If it could be anything but a joy, it might be called intrusive, for its elements are everywhere placed before our notice.

"He hath made everything beautiful in its time." Perhaps the reason why we do not always see the beauty is because it is so commonplace. Familiarity with things tends to emphasize their useful side. We get used to looking for helpful things—the necessity of our lives demands it—and we make utility the test of favor. But if we look for the beautiful, we shall see that as well as the helpful. The sense of beauty springs from taste, and should be developed as a part of culture, and of practical life. The cultivation of such taste has a real value apart from the pleasure of the time. It increases one's capacity for enjoyment in other mental lines also. Without in the least decreasing a man's sound judgment or his practical usefulness, it opens another avenue for the universe to reach his life. It gives new value to all his surroundings, and new zest to even his daily toil; for he sees that the elements of a finer life are all about him, ready to become a part of his strength. To one who has thus accustomed himself to search for beauty, the farm or the workshop can never again be dull; for he will find an interest, and often a keen delight, in the most commonplace things of his daily life.

#### CURIOUS NAMES.

BY JOSEPHINE HARPER.

THERE is often a curious and interesting history connected with the origin of many names in geography. Beginning with the continents, we find Asia means eastern, and is so called because it occupies the eastern part of the world. Africa signifies hot and dry, and this is the character of most of that continent. All are familiar with the way America received its name. Europe is the only continent that has any romance connected with its name. In Greek mythology is found the origin of the name Europe. Agenor, king of Phœnicia, had a daughter named Europa, who was reputed to have been exceedingly beautiful. The god Jupiter fell in love with her and wished to marry her, but her father refused to grant permission. Jupiter became greatly enraged at the refusal, and to obtain possession of Europa, notwithstanding her father, he changed himself into a white bull and mingled with the herds of Europa's father, where he succeeded in attracting her attention, and finally induced her to mount upon his back. As soon as she was seated, he bounded off on the plains, and reaching the sea, swam across in safety, by the aid of Neptune, the god of the sea. Agenor was both angry and grieved at the loss of his child, and sent her brothers in pursuit of her; but made them swear before leaving that they would not return until they had found her. They crossed the sea, landing in what is now Greece, where they searched for a long time without finding any trace of her. Not desiring to return, they settled in the new country, and in memory of their sister called the place Europe.

Australia means southern land. Ooral is a Russian word, meaning girdle or belt, and from this the Ural Mountains take their name.

The river Amazon was called by the Indians Amasona, signifying "canoe destroyer," on account of

the great tides of the ocean which rush up this river for some distance inland with considerable violence, rendering it dangerous for the Indians to navigate it with their frail boats. In 1530, Orellana named the river Amazon, from the companies of beautiful women armed for war which he professes to have seen along the banks. There is no doubt but that the Indian name suggested to Orellana the fable of the Amazon represented in fabulous history to be a race of female warriors who founded an empire on the shores of the Black Sea, where, having driven out all "horrid" men, they enjoy all the sweets of "women's rights" to the fullest extent.

The most southern country of South America is said to have derived its name from patagon, a large foot, on account of the large, clumsy feet of the inhabitants, who were reported to be a race of giants from eight to ten feet high, and having feet that really measured a foot, and sometimes fifteen or more inches. Until recent years Patagonia was thought to be a barren, unfruitful country, whose inhabitants were a semi-civilized people, but little removed from barbarous tribes. Whatever was the condition of the country in the past is certainly not true at the present time. I was much interested in Patagonia's exhibit at Chicago, and, though not large, it fully demonstrated that it was not so far behind incivilization as had been supposed. Educationally it is ahead of some of the more favored countries of South America. Schools are being established all over the country, and there is one for young ladies that will rank with similar schools in our own country. The school referred to has at its head a graduate of Mount Holyoke, and three of the teachers are graduates of the same institution. A gentleman from the east, visiting this school, says that he never heard any better demonstration of a theorem in geometry anywhere than was given in this school in far-away Patagonia.

Most of the geographical names of places in our own country are derived either from their discoverers or from an Indian name. The latter are so numerous that the Sunday edition of one of our dailies would be needed to fully explain the meaning of all of them. Lake Chesuncook, the Great Goose Lake, takes its name from the great number of wild geese on the shores of the lake. Mohawk means man-eater, and was applied to the Indians along the river because they ate the bodies of their captives, the name finally being given to the river itself.

Concerning the name of our own State, there are two traditions. One is that Kansas means smoky, and was applied to this western country on account of the smoky or hazy appearance of the atmosphere caused by the prairie fires; the other is that it means a good potato, and was so called owing to the great number of wild potatoes found here.

Quackenbos says, in substance, that when the Dutch first landed on the island in the mouth of the Hudson river they called the Indians together in a council and made them a present of a hog's head of rum, and when they were all intoxicated the Dutch induced them to sell their island for a few presents. The Indians on recovering from their stupor called the island Manhattan, meaning "a place of drunkenness." Webster says that Manhattan signifies a town on an island. Neither of these meanings apply to our own beautiful little town nestled among the hills at the mouth of the Big Blue where it flows into the great Kaw. So I wonder if Manhattan may not mean a "town inland." What think you?

#### Country Schools for the Farmer.

A farmer writes to an exchange complaining of the frequent use of terms which neither he nor any member of his family understand; and the point is well taken, for many in like circumstances have experienced the same difficulty and will until the end of time. Nor is the fault with the newspaper; for it is compelled to use language that conveys the information whether the education of the reader has fitted him to understand it or not.

The words quoted by the complaining writer are, "protein," "carbo-hydrates," "organic matter," "nutritive ratio," and the like; and the reply is that, "if he persistently reads the paper and makes a student of himself, as he ought to do, he will soon learn their meaning, which is quite correct; not alone with these, but other words and terms in common use among men of a particular business or calling. The chief difficulty in the way is, of course, the lack of a practical and technical education in youth, and of a systematic habit of discovering the meaning of such words as from day to day are met with. A mechanic or tradesman, a sailor or soldier, a lawyer or doctor, is made to learn the meaning of terms in common use pertaining thereto when acquiring a knowledge of his trade or profession, and it is no more difficult for a farmer to learn than any other workman.

This leads us to one more thought the writer suggests, and it is an important one. It is estimated that

over eighty per cent of all the sons and daughters of farmers never receive any other schooling than they get at the little country school house, and none too much of that. It is the only school in the world the farmers are solely responsible for. What a help it would have been to us old fellows when we were trying to soak up a little knowledge in that old school house if there had been one branch of study devoted to agricultural chemistry. Not a thing we studied had scarcely any application to the life we lived on the farm, except arithmetic. If we could have learned there the meaning of "protein," or what is the same thing, "albuminoids," and also "carbo-hydrates," and a lot more of the principles and terms used in the discussion of modern agriculture, would we not be greatly helped today? Words are tools with which we fashion out the meaning of things.

Now, here is a hint: Let every farmer who reads say to himself—"I will see to it that my boys learn the meaning of the terms used in agricultural discussions. I will spend \$2 at once for 'Stewart's Feeding Animals,' so that they can understand something about the analysis of foods. And then, as a patriotic duty that I owe to my neighbor's children, I will start a movement to have these things taught in our district school. I will write to the State Superintendent of Public Instruction and ask him if something cannot be done to make the little farm school worth something to the farmer's boy and the future farmer." It would be a blessed day for us all and for the growth of intelligence among the farmers of the land if such a movement could be started in all the country district schools in the United States.—*Colman's Rural World*.

#### Progress in Farm Knowledge.

This paper must not end without a brief recognition of the progress in knowledge already made by our farmers, and of the urgent need of larger advances in the same direction. McCauley tells of the state of agriculture among our English ancestors three centuries ago. Over their rude implements and careless husbandry, their dim perception of the value of the rotation of crops, we are more advanced than were they beyond the primitive tillage of Egypt and Syria. And yet we are assured by Prof Rogers, of Oxford, that the Plantagenet king sedulously enacted laws to stimulate and foster industrial and agricultural life.

In our own age we are like the enchanted youth, who woke from a deep sleep, the result of a dusty and sun-heated journey, to find himself clothed in royal robes and lord of a palace and wide domains.

The sacredly guarded secrets of nature in a decade have been revealed, and now, as in no preceding years, are the potent agencies of earth, sea, air, and sun bent to the service of man.

Occult laws emerge from their dread abode to become handmaids of industrial or of refined enjoyment. Isolated facts have fallen into scientific statements. The very nomenclature of the new truths and teachings stagger our memory, and the inventions that minister to human need or desire fill ample pages in government reports.

While every department of human exertion has been stimulated to intense energy, in no one does this seem so vast, so commanding, as in the production of the fields and pastures.

The program the society has adopted for its annual meeting shows a range of topics not only instructive, but calling for wide erudition, and yet the list does not comprehend a large number of matters indispensable to the farmer of today.

The prodigious possibilities of the great campaign in the western part of this State, when a soil so exuberant with plant life is touched by fructifying waters, is brought before us in a new and urgent form.

Beneath a fervid and genial sun there sleeps millions of acres of land as rich as the delta of the Nile, and like that historic valley, whence the storehouses and granaries of the old world drew vast supplies, this western plain demands canals, dams, and reservoirs and large machineries to transmute the sparse herbage into carpets of living green.

If the watering of our great plains ever becomes a reality, the truths and teachings grouped under the word hydrology must pass into theoretical and practical possession of our western farmers. Successful irrigation means acquaintance with hydrostatics and hydraulics, with meteorology in its most extended sense, the laws of heat, light, and electricity, geological and geographical facts, and beyond these involves a familiarity with plant life and nutrition, and a long train of related sciences, each and all of which join hands with the patient tiller to produce the purple alfalfa, the fragrant garden, the rustling harvests.

Higher and wider knowledge is the imperative demand of the hour. Thirty-five years ago, when Kansas had hardly one-sixteenth of its present population, the framers of our constitution implanted within that honored document the duty of each succeeding Legislature, to protect the cause of education; not alone for the children, but for the youth who had passed through the routine of the common school.

This benign provision reflected the sentiment of our people then and it still holds the lofty regard of those who have since that time made Kansas great and prosperous.

The farmer of today ought to be one whose mental prowess and discipline equals the most successful business man, the brightest lawyer and the most sedate and erudite clergyman.

To his vocation science lends her wings, the laboratory opens its doors, invention beckons him forward, and great nature, a loving father and mother, holds out to him a helping hand.—*Solon O. Thacher, before Board of Agriculture*.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address C. E. Goodyear, Loan Commissioner, Oatville, Kan.

## GENERAL LOCAL NOTES.

Mrs. C. Smith and daughter Lottie were among the visitors on Friday.

Miss Johnson of Silver Lake visited Misses Patten and Kennett Friday.

Lieut. Catlan and two daughters, of Fort Riley, were visitors on Tuesday.

Mr. F. T. Walker and sister Lillie of Topeka are visiting with A. C. and Gertrude Havens this week.

The first strawberries this year were picked Thursday. The bed promises to yield a good crop of large berries.

Mrs. Kirshner, who visited last week with her parents, Pres. and Mrs. Fairchild, returned to Kansas City on Monday.

E. C. and J. E. Trembly are enjoying a visit from their parents who drove over from their home at Council Grove on Thursday last.

Mrs. G. W. Higginbotham donates to the Library the "Memories of Alexander Campbell," two volumes, and "Life of Rev. M. Officer."

Ex-Regent Stratford has shaken the dust of El Dorado from his feet, and taken up his abode for the summer in Roseburg, Oregon.

Preparations are being made in the Sewing Department for an exhibition of work at Commencement on a larger scale than ever before.

John and William Poole were favored with a visit from their brother last week. He intends to enter next fall. Their mother also called one day.

Misses Cordelia and Cassi Andrews of Paulet, Vermont, are visiting Miss Bertha Winchip. They occupied the visitors' seats in chapel Friday morning.

The Manhattan Musical Entertainers is the name of a club composed of several young ladies, among whom are graduates, former students, and students of the College.

Among the students of the State Normal School are found several whose faces were once familiar here. All expressed a hearty love for the College and College friends.

Among the visitors on Friday last were noted Miss Hattie Yenawine, Mrs. Emma Bowen, '97, Miss Jennie Smith, '94 and her mother, Mrs. G. F. Dewey and her daughter, Mrs. Ione Earle, '93, and Mr. Joel Carey.

President Fairchild addressed the training classes of the State Normal School in the elegant Taylor Hall last week, giving a brief talk upon "The Art of Composition," especially the art of training pupils in composition.

The city telephone poles have reached the College gate, and only await an invitation to enter. The College 'phones, seven in number, have been shipped, and will probably be in place in time to connect with the city exchange when it is put in operation June 1st.

The May Festival at the Opera House last evening under direction of Prof. Brown, was a treat to music lovers. The Choral Club was responsible for the entertainment, and was ably assisted by the Cadet Band, the Amateur Orchestra, and the Ionian Mandolin Club.

President and Mrs. Fairchild and Mrs. Kedzie plan a European trip for the summer vacation. They expect to leave June 15th, and sail from Montreal on the Allen Line steamer "Parisian" on the 22nd for Liverpool, where they will probably be met by David Fairchild, now studying in Germany. While the itinerary is not yet complete, the party will visit England, Scotland, Germany, and France, with brief trips to Switzerland and Italy as possibilities. President Fairchild bears a commission from Governor Morrill, authorizing him to investigate the various systems of irrigation in use in foreign countries. Other members of the party will be Mr. and Mrs. Fred Popenoe, Mr. and Mrs. Bowman, and Mrs. Downs, all of Topeka.

The chapel audience was entertained Friday with the following orations by the last division of the Seniors: "The Armenian Trouble," E. P. Smith; "Hindoo Music," Olive Wilson; "A New Trust," F. J. Smith; "Waste Baskets," Etta Smith; "The Nicaragua Canal Company and the American Government," W. H. Steuart; "She Hath Done What She Could," Kitty Smith; "The Weather Bureau," E. C. Trembly; "The Re-Civilization of the East," G. C. Wheeler; "A Source of Knowledge," J. J. Johnson. Music, "The Fourth-years' Farewell," by Patten, Joss, Fryhofer, and E. P. Smith followed. The words of the song were written by Geo. Fryhofer. Other musical numbers were a vocal selection by the "Smith Quartet" and an overture by the Cadet Band.

## GRADUATES AND FORMER STUDENTS.

Fanny Cress, '94, writes that she will graduate from the Normal School at Steubenville, Ohio, in June.

S. B. Johnson, Third-year in 1892-3, is a guard at the State Penitentiary. He may spend the summer here in study.

W. E. Smith, '93, is one of two teachers of this county granted first-grade certificates by the County Board of Examiners.

Mrs. Dewey-Earle, '93, is on a visit home. She arrived Thursday, and in company of her mother greeted College friends Friday afternoon.

Mrs. Ina Turner-Bruce, '89, visited College on Thursday in company of Mary C. Lee, '89, of Manhattan. Mrs. Bruce has moved from Topeka to St. Louis.

Josie Finley, Third-year last term, who, it will be remembered lay unable to move for two months because of an injury to her hip received while skating, has been for six weeks past at the infirmary of Dr. Ross, and is in a fair way to recover, being now able to walk by the aid of crutches.

The following graduates of this College are pursuing professional studies at the State Normal School, expecting to complete the course there, and gave to President Fairchild on his visit last week the heartiest of greetings: Emma E. Glossop, '83; J. N. Harner, '92; R. S. Reed, '92; A. F. Niemoller, '93; and W. J. Yeoman, '93.

J. E. Payne, '87, in carrying forward some investigations he is now making in regard to root growth of various field crops, had occasion to dig up an alfalfa plant of a year's growth. He finally reached the end of the roots at a depth of five feet below the surface. This plant was grown in the dry weather of the past year and serves to hint at great possibilities as to "what might have been" had it rained.

H. C. Cobb, Second-year in 1892-3, is, according to the Muskogee (I. T.) *Phoenix*, a person of considerable weight histrionically as well as avoirdupois-ically. In a report of the drama "On the Potomac," by home talent, the *Phoenix* says: "Henry Cobb, as Dr. Grimes, was exceedingly fine, and brought down the house several times. If there is any timidity about Henry he left it at home that night and borrowed some gall to use on this occasion. Every movement made by him was perfect, and it was the general opinion that the stage was robbed of some excellent talent when he began to roll pills."

## Entomological and Zoological Notes.

A number of interesting specimens of quartzite boulders from Pottawatomie County were donated to the College this week by Hon. John E. Hessin, for use in the geology classes.

The first installments of the spring collections of insects are being handed in, named by the students in entomology, for inspection and correction preparatory to the final arrangement in boxes at the end of the term.

Two pelicans, one presented by G. K. Thompson, and one procured by purchase, make handsome additions to the collection of mounted birds.

A sand-hill crane, received by the department some time since from Albert Dickens, is being mounted by C. W. Pape of the Fourth-year Class, a special student in zoology who renders valuable assistance in taxidermy.

The entomological cases from the Horticultural Hall and the museum case belonging to the Scientific Club have been placed in the new museum.

The collection of lepidoptera is being arranged in the display cases in the museum by Assistant Marlatt. A colored geological map of Kansas and a chart showing generalized sections through the State have been prepared for use in the geology class.

A crow's nest from the Marlatt orchard finds a place in the museum this week.

Twenty-eight breeding cases to be used in the rearing of insects during the coming summer and autumn have been placed in the attic ready for use.

Fred Leonhardt and Harry Whitney of College Hill add to the museum a specimen of the great horned owl and one of a pouched rat.

A blacksnake, three blue racers, two hog-nosed adders, a garter snake, and two rock lizards, most of which were found on the College campus, together with the alligator from Florida, form an interesting group of pets in the laboratory where they are visited by many (presumably admiring) students.

BERTHA KIMBALL.

## State Examination at Approved Institutions.

## PROGRAMME.

Monday, May 27th—Afternoon Session.

1:30 P. M. to 4:30 P. M.—History of Education.

Tuesday, May 28th—Forenoon Session.

8 A. M. to 10 A. M.—School Law. 10 A. M. to 12 M.—Methods.

## Afternoon Session.

1:30 P. M. to 4:30 P. M.—Philosophy of Education.

Wednesday, May 29th—Forenoon Session.

8 A. M. to 10 A. M.—School Management.

## COLLEGE ORGANIZATIONS.

*Student Editors.*—Hortensia Harman, C. A. Johnson, J. V. Patten  
*Alpha Beta Society.*—President, Nora Fryhofer; Vice-President, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon. Admits to membership both ladies and gentlemen.

*Webster Society.*—President, W. H. Steuart; Vice-President, J. B. Harman; Recording Secretary, J. C. Wilkin; Corresponding Secretary, T. M. Robertson; Treasurer, J. E. Trembly; Critic, E. H. Webster; Marshal, A. G. Wilson; Board of Directors, S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, S. Nichols. Meets every Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Hamilton Society.*—President, W. H. Painter; Vice-President, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, L. A. Fitz; Board of Directors, E. C. Joss, S. Robbins, F. B. Yoder, C. D. Adams, V. Maelzer. Meets on Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Ionian Society.*—President, Flora Day; Vice-President, Mabel Selby; Recording Secretary, Minnie Pincomb; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Critic, Hortensia Harman; Marshal, Mabel Selby; Board of Directors, Laura McKeen, Dora Thompson, Mabel Selby. Meets Friday afternoon. Admits to membership ladies only.

May 10th.

President Fryhofer called the Alpha Beta Society to order, after which the Society orchestra in a splendid manner rendered a selection. A. C. Havens led in devotion. "The Strike" was the subject of a well written and admirably delivered oration by R. W. Clothier. The Society was very much entertained by a discussion on a present-day topic, "Big Sleeves." Gertrude Havens showed us the absolute need of such appendages, while A. C. Peck, in an inexperienced manner, tried to show their utter absurdity and nuisance. Each had an artist and showed fine illustrations to make plain the argument. Ernest Cottrell, as editor of the Gleaner did himself credit in presenting the interesting contents of its pages. Grace Secrest and Marian Gilkerson gave us some excellent music in the form of a piano duet. Adjournment. M. A. L.

May 11th.

The Hamilton Society was called to order promptly on time by President Painter. Prayer, R. K. Farrar. "The Kansas Boy" was recited by G. C. Hall in a very pleasing manner. The "Recorder" was presented by J. W. Holland. It was one of the most notable editions of the year on account of the variety of the productions. Conrad and Correll favored the Society with music and responded to an encore. Debate, Question, "Resolved, that the experiments as carried out at this Station are practical." Affirmative, G. W. Finley and S. J. Adams; negative, A. L. Peter and V. Maelzer. This is a practical question, and was discussed by the speakers in a practical manner. Decision in favor of the affirmative. J. D. Trumbull read a humorous selection entitled, "A London Bee Story." Next in order was unfinished business. Some business had been transacted under this head when suddenly the electric lights went out. The Society was not ready to adjourn, however, so the session was continued by the flickering light of a candle and the janitor's lantern until the committee on annual speaker had been given additional instructions. Adjournment. H. M. T.

May 10th.

The Ionian Society was called to order at the usual hour by President Day. After singing, Ethel Patten led in prayer. Roll call showed a goodly number of members present in spite of the threatening weather. Minnie Pincomb was installed as Recording Secretary for the remainder of the term. The program opened with an essay entitled "A Biography," by Mary Kimble. A "Parliamentary Quiz" by Grace Stokes showed that Ionian girls are becoming well versed in Robert's Rules of Order. Emelie Pfeutze favored the Society with a vocal solo, Rena Helder at the piano. She did not respond to a hearty encore. An oration on "Books and Brooms," by Maggie Correll, was very instructive as well as entertaining. She very truly said: "Not books alone, not brooms alone, but brooms and books make the world." In a discussion on "Our Society Trials—Are They Just?" Edith Lantz brought out very forcibly the defects in our trial system, and their remedies. The violin solo by Ruth Brockway, with Rena Helder at the piano, was thoroughly enjoyed by all, as shown by the hearty applause they received. Emma Finley presented the Oracle, having for her motto, "We should be upright and not be kept upright." This was an exceedingly interesting edition, and among some of the articles were, "Our Annual," "A visit to Geuda Springs," and "A Continued Story." After the usual business, report of critic, and reading of minutes, the Society adjourned. W. A. H.

May 11th.

President Steuart called the Websters to order at eight o'clock. After roll call the Society was led in devotion by J. B. Dorman. The program opened with a debate on the question, "Resolved, that more can be learned by reading than by observation." The affirmative side, supported by E. Carman and B. F. S. Royer, in introducing the subject, maintained that reading is the fundamental basis of all general knowledge; our knowledge now is the written record of what has transpired before. True, the astronomer and inventor learn by observation; but his observation can be conveyed to the public only by reading. "Where there are no books there is no civilization." A. G. Wilson and L. A. Nelson in their defence of the negative, argued that observation is a necessary element of reading; to understand thoroughly and be accurate, we must see the real object; all great inventors made their discoveries by observations in actual life. The decision of the Society was for the affirmative. G. A. Dean next showed the Society his oratorical ability in the manner in which he rendered an oration, appealing for help for the "Nihilists of Russia." The "Smooth Side of Agricultural Subjects" was illustrated in a humorous declamation by I. A. Robertson. E. G. Gibson displayed his Shakesperian inclination in a well composed original poem, entitled "Steps of Time." The progress and benefits of "Trade Unions" was well presented in an oration by F. Rummel. After a very interesting discussion on the advisability of applying the "Monroe Doctrine" to the late Nicaraguan difficulty, C. B. Selby read a first-



class edition of the Reporter. Among the articles treated were, "The College Egotist," "Before and After Taking Gaseo-Cephalus Treatment," Remenyi, "Nay," "Who was It?" and "Our Society." The Society was honored by a visit from several members of the Ionian Society under the chaperonage of Mrs. Kedzie. After the usual routine of business, the Society adjourned. T. M. R.

#### The Commencements.

Now approaches the season of the commencements. From the district schools to the great universities, from the white wooden temple of learning at the crossroads to the ivy-covered walls of ancient seats of learning, will sound the voice of the graduate, in essay, oration, salutatory, and valedictory, and all that goes between them. The newspapers also will mildly jeer and poke ancient fun at the season and its exercises. We shall hear about "callow" orators and their "sophomoricallly" expressed thoughts; the "sweet girl graduate" will be alluded to in connection with her supposed disposition to dwell on "Night brings out the Stars" and "Beyond the Alps is thine Italy." And we shall be given to understand—at least we always have been—that there is something indescribably raw and foolish and silly and, so to speak, "fresh" about commencement time and all that pertains thereto; and yet there is another view.

Probably it is not remembered now who gave the name "Commencement" to the annual college exercises, but whoever he was he had "a great head" and apprehended the situation and the proper use of the word. It is the "commencement" indeed, this delivery of the graduating essay or oration, this reception of the diploma. The "play's the thing," and this is the prologue. This is falling out of the nest for flight or failure; this is where the guide says, "There's your road," and turns and leaves; this is where the young soldier turns white and solemn (though he will fight when the time comes) at the dull boom of the distant cannon. It is a time of fears and prophecies and omens. It is no joke—this Commencement.

It is quite safe to say that it is a good thing to graduate and to be for the time being part and parcel of a "Commencement" somewhere. Men, of course, quarrel about education, what it is, and what it is not, just as they contend about baptism and the Trinity and the future duration and condition of the wicked; but after all, any study, any teaching, not absolutely evil, is for good; it is doubtful if there has ever lived teacher or tutor, professor or college president, who did not impart some knowledge of use and value, or student who failed to acquire something. The diploma, wherever received, is evidence of time and labor expended in trying to learn something, and so well spent. The young man or woman who, after two or three or four years, gets the diploma, stands higher for the time being than the young man or young woman who has passed the same length of time without an effort to know more, or grow more accomplished and brighter and better.

And it is to be noticed at Commencement all "commence" well and on the right side. The orator may be a "callow" orator, and his address may be "sophomoricall," but it is always on behalf of the "good, the true, and the beautiful." Nobody ever heard on Commencement day a plea or apology for tyranny, or corruption, or ancient and rusty wrong. None of the historic wretches who have made the world wretched by their appearance are ever held up except for execration; none of the martyrs, apostles, and confessors for the human race are mentioned save in glorifying word and phrase. Commencement day is the hero's and the patriot's day. It is the best heart and hope of youth that speaks on Commencement day. There may be lack of experience; the tongue may not be so trained as to speak in the smoothest and clearest and most logical phrase what heart and brain would tell; but in it all may be heard and seen and felt the intent, the good purpose.

There can be for any human being but one Commencement day. There may come other victories, but none exactly like this first one. Happy the young man or woman who realizes the hopes and promises of that day of days; and who is never involved in the shadows of a night that has no stars, and who finds beyond the rocks and snows of Alpine heights the smiling plains of the desired Italy. Success to Commencement and the "commencer!"—*Kansas City Star.*

#### Agricultural Colleges not Trade Schools.

The words of the act of Congress creating the Agricultural Colleges will not admit of the narrow construction that the institution in the college shall be mainly agricultural and mechanical as such an education would not "promote liberal and practical education in the pursuits and professions of life." It must be construed to mean that there are to be such courses of instruction as will give a broad and useful culture that shall be the foundation of all the pursuits and professions.

These colleges were not intended to make and graduate a skillful tailor, shoemaker, blacksmith, plowman, or shepherd, but to discipline and improve the mind, to educate the faculties of the mind so as to fit the individual for the acquisition of an easier and better manner of the details of any pursuit or profession. It is not to so educate young men and women that they will be fitted for nothing except agriculture, but to educate the understanding, to broaden the intelligence, to cultivate the judgment, so that each one may decide on the future course in life, unworried by a narrow policy.

It was well said in the annual address of a master of a State Grange that "The farmers of the country are behind their fellows in other vocations and professions for the reason that they lack definite knowledge upon a thousand things that should be taught

in agricultural colleges." But if nothing except the theory and practice of agriculture can be taught in the college, how will the student learn those thousand things, the want of which makes the underling and keeps the farmer in the background. The one who is destined to be a farmer should have as good and liberal education as the lawyer, physician, or clergyman.

Agriculture may stand at the head, but it does not constitute the whole superstructure of a liberal and practical education; and when these colleges are made the vehicle of giving instruction solely in agricultural studies their days of usefulness will be passed, and the farmer will continue to be only a farmer.—*Dudley T. Chase, in New England Farmer.*

#### The Real Fruits of Study.

The president of a western college, addressing a graduating class, said to the graduates that they might forget all they had learned from books during their course, and yet carry away from college the chief fruits of their study. This declaration, though somewhat exaggerated, contains a germ of truth that neither pupils nor teachers fully appreciate. We know as a matter of fact that few of the learned men of the day outside of the teaching profession could pass the entrance examinations to the colleges from which they graduated ten or twenty years ago. They have forgotten the facts of history that they once memorized; the rules in grammar and arithmetic that they once had by heart have slipped from their memory; they can no longer solve geometrical problems or describe chemical reaction; in short, they have grown rusty as to such things. But they have not forgotten the principles underlying the various studies, and could readily regain their old-time proficiency if occasion should require it. Nor have they lost the training they received while engaged in their school studies, the habits of attention and of observation developed in their youth, the ability to reason out a proposition and thus to develop their capacity to think. It is this discipline of the mind that constitutes the valuable thing in education, not the mere cramming of the memory with facts or rules from the books.

Unfortunately, there are some teachers who do not understand this, and they help to mislead the youths entrusted to their care. The latter, mistaking the function of education, ask themselves of what use is this or that study? If it should be mastered, of what possible service can it be? They reply to their own questions by neglecting to study or by pursuing it with the sole purpose of passing an examination, and later in life learn of their mistake. The young soldier, forced to go through the same drill day after day, and tired out with the endless reviews and inspections of new troops, asks himself similar questions, but not after he has been in action and has learned that his own life, the lives of his comrades, and perhaps the fate of his army may come to depend upon the promptness and precision with which movements are executed. The parallelism, though not complete, is sufficient for the argument. In case of both the soldier and the student, the first purpose of training is to reduce the subject to discipline, to orderly methods. When that has been accomplished, each is fitted for the work before him. The soldier is only part of a great machine directed by other minds; the student also becomes part of a great machine obscurely directed, but he directs his own course (within limits) and employs his own faculties. It is to qualify him to think for himself, to observe and make use of his observations, to write and talk intelligibly, that he has been educated, and though he was drilled, he will carry with him through life the training that is the true end and aim of education.—*Baltimore Sun.*

#### Save the Rainfall.

The farmers of the west had an object lesson last year on the value of moisture and the necessity of saving it in a dry time. Much more of it can be saved than most farmers can imagine; in fact, the secret of success in farming is largely in the proper management of soil moisture. Some years the problem is to get rid of the surplus, in others to conserve every particle possible; some years the problem of summer culture is to dry out the ground, and in others to keep it as moist as possible. For the last two years we have needed all the moisture; it may be, before thirty days that we may want to get rid of it. For the present, however, the problem is how to save the moisture.

During the growing season especially, the sun and air are continually evaporating moisture from the surface. It is by these means, in connection with drainage, that we get rid of surplus water in a wet time. The problem is how to check this evaporation in a dry time. Water is constantly rising up from below by what is called capillary attraction, the same force which causes the oil to rise in a lamp wick or the coffee to rise in the cube of sugar when the smallest corner of it is dipped in the cup. The best possible way of conserving moisture in a dry time is by the mulch of dry dirt. The capillary tubes through which the water rises, are continuous, and unless, so to speak, they are broken off at the top the soil will dry out completely. The mulch of dry dirt is simply the breaking of these off and allows the water from below to spell out below the dry dirt at the roots of plants. If a rain comes it settles the mulch, the capillary connection with the ground below is re-established and water is wasted. The remedy is to re-establish the mulch of dry dirt. Many a farmer loses all the benefit of a shower that might have saved his crop by failing to cultivate his corn just after a heavy rain. It was clean and he thought it did not need cultivation. He forgot that the object of cultivating corn in the latter part of the season is not the killing of the weeds, but the conserving of moisture by means of the mulch of dry dirt.—*Orange Judd Farmer.*

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Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

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### SOME ECONOMIC SOPHISMS.

BY PROF. THOS. E. WILL.

READERS of current popular economic discussions, observing that the language used, unlike the terminology of most sciences, is that of every-day life, are prone to jump to the conclusion that economic science is something that anyone may master at odd times, and upon which he may speak with the fullest confidence. President Andrews (Institutes of Economics, pp. 28-29) has spoken of "the economic sciolism so common among persons not students at all, who yet discuss rent, profits, wages, and whatever other topic is named by a familiar title, with all the assurance of an Adam Smith;" and he has also pointed out that "it is a higher attainment, a finer feat of mind, to be expert in the inexact" (sciences; political economy, e. g., of which he is speaking) "than in the exact sciences." Making all due allowance for professional bias, we should nevertheless be on our guard against over-confidence when seeking the solution of our social and economic problems.

The point under consideration may be made clearer by considering certain economic and ethical propositions that have played and may still play an important part in social life.

The first of these propositions is that value, i. e., market- or exchange-value, is produced, and produced wholly, by labor; and that the market-value of a commodity is exactly proportional to the amount of labor that has been expended upon it. Adam Smith, "the father of political economy," declared (Wealth of Nations, Bk. I. chap. V.) that "Labor is the real measure of the exchangeable value of all commodities;" that "Labor was the first price, the original purchase money, that was paid for all things."

Benjamin Franklin (Works ed. by Sparks, 1836, Vol. II., p. 267) said: "Trade in general being nothing else than the exchange of labor for labor, the value of all things is \*\*\* most justly measured by labor." Ricardo, "by general consent recognized as the greatest economist of the nineteenth century" (Cossa Introduction to Study of Political Economy, p. 311), lent the weight of his tremendous authority to the labor-value doctrine; while Karl Marx, following in his wake, accepts the doctrine of the orthodox masters, and, with slight modifications, makes it the foundation of his economic philosophy. He says: "Commodities, therefore, in which equal quantities of labor are embodied, or which can be produced in the same time, have the same value. The value of one commodity is to the value of any other as the labor-time necessary to the production of the one is to that necessary for the production of the other. As values, all commodities are only definite masses of congealed labor-time." (Capital, p. 4).

Take, as a second proposition, one that, at first statement, impresses us as absolutely fundamental in ethics; and an axiom requiring no demonstrations the proposition, viz., that each should be "rewarded according to his works" and according to nothing else, that each should receive and enjoy the product of his labor or its fair equivalent; "his product, his whole product, and nothing but his product." This proposition is a chief tenet with one of the contemporary schools of social reform, and gives to their propaganda a power upon many fair and generous minds is unique.

Combine, now, these propositions in syllogistic form, and we have: Proposition one—All exchange-value is due and exactly proportional to the labor employed in its production. Proposition two—Each should have and enjoy his product (or its equivalent), his whole product and nothing but his product.

Or, more briefly: All value is produced by labor. Each should have his product.

What, now, is the conclusion that infallibly follows if it be not the following that is actually drawn by a multitude of economic thinkers: Conclusion—Labor should have and enjoy all exchange-value. Labor produces all; hence labor should receive all.

We have now but to give to the term "labor" the meaning that quite commonly attaches to it, that, viz., of the "laboring class," the "wage-earners," the poor men who toil for small pay; and our conclusion means that these less-favored members of society have produced everything that can be bought and sold; and, by right, should possess it. That they do not, but, instead, often languish through life in the toils of hopeless and degrading poverty, is due, we must then infer, to deep-seated social injustice.

Let us now consider the premises from which our conclusion is drawn. In the first place, is exchange-

value due to labor and to labor alone? and is it directly proportional to the amount of labor expended in its production? City land sometimes sells at the rate of millions of dollars per acre. "In London land has often sold for \$240 per foot, and select spots, it is said, for as much as it would cost to pave them with English sovereigns laid upon edge (Andrews, Inst. of Ec. p. 166). This, we are told by some,\* is due to the enormous amount of labor expended upon the land since the founding of the city. But the prices quoted are for bare land, and not for improvements due to labor. Note, too, that the vacant lot upon which no labor has ever been spent is worth as much as the lot upon which the sky-scraper stands. Lots are lots, not buildings.

Again, if land-value is due and proportional to labor, how shall we account for the phenomenal rise in the price of land in the boom-town; and how account for the frightful drop when the boom bursts?

Turn from land to buildings. A splendid hotel is built in our boom-town; it is worth, say, \$10,000. What is it worth when the boom has collapsed? Is there any less labor in the building now than before? What, again, were the buildings in Veii worth after the Romans, though leaving the city practically uninjured, had massacred the inhabitants? Was there any less labor in the buildings after the massacre than before?

Bishop William Taylor (South American Cousins saw a splendid ship washed high and dry on the western coast of South America. A huge wave had lifted it above high-water mark and left it. The ship, though uninjured, was worthless. Did the wave diminish the amount or quality of the labor that constructed the ship?

Here is a machine that might once have been sold for \$100. It is still perfect; for it has stood, unused, in the ware-house. Today it will sell for the value only of the old iron it contains. Here, again, is a suit of clothes that, though uninjured and unworn, has lost fifty or seventy-five per cent of its value. Why? The fashion has changed or the suit has been carried from a country where it was in style to one in which it appears grotesque. How can the altered value of the machine and the suit be explained on the labor-value hypothesis?

And what is true of the value of products is also true of the value of labor itself. A boy serves an apprenticeship; attends, perhaps, a technical school; works at a trade, and comes to rank as a highly skilled worker at a good wage; but machine industry supplants him. The labor put into the work of preparing him for his special calling row counts for simply nothing. He must join the ranks of the unskilled at low wages or enter the army of unemployed.

With a premise overthrown, our syllogism is, of course, worthless; nevertheless, while about it, let us examine the second proposition. Is it true that each ought to have and enjoy his product, his whole product, and nothing but his product?

If this principle were faithfully carried out, what would become of the babies? Since they produce nothing, they would receive nothing, and the race would perish in a single generation. How too, would the aged fare who may have produced little and spent freely in their productive period, and hence laid by nothing? What of the sick, the insane, the blind; the defectives, dependents, and delinquents in general? If the strong and robust producers receive and selfishly enjoy their entire products, the above classes, as in more callous societies and ages, must be left miserably to perish. While society might survive their loss, the reaction upon the moral natures of the survivors would be disastrous.

What, too, of the "cause that needs assistance," the church, the benevolent enterprise, the missionary movement, and the thousand interests that demand our aid? Assuming, together with the above principle, an ideally just system of distribution among producers, each may say of the share that falls to him: This is mine, since I produced it; no "cause," and no individual, therefore, has any just claim on me. Beggars, be gone!

How, finally, would society or the State itself exist? Exchange-value, it is true, cannot exist apart from society; but to say that society as a body produces value by its labor would be absurd. Even to hold, with some, that society by its presence creates certain kinds of value, as of land, is to assume an untenable position. If we prove anything, we prove too much. Land, it is true, has no value in the

\*Herbert Spencer, e. g., Justice, Appendix on the Land Question.



absence of society; but neither has anything else. Building-values as well as land-values fell to zero in Veei when once the population was gone; and a like result would follow the depopulation of Chicago or of the world.

If, then, society as such does not create exchange-value by its labor, society, by the application of the principle under consideration, would be entitled to absolutely nothing. Ethically, it could demand nothing by the exercise of taxation; and, worse than the United Colonies under the Articles of Confederation, ethically it could not even beg of the citizens. Government left unsupported would give place to anarchy, and society would resolve itself into its elements. A principle, therefore, that on its face appears ethically unimpeachable would, if consistently applied, lead by two distinct roads to social annihilation.

Both propositions, therefore, fall to the ground. But assuming them, for the sake of argument, to be established, what of the conclusion? Since labor produces all value, labor, we are told, should have and enjoy all value. What is labor? A form of kinetic energy applied to the accomplishment of certain ends. Can energy, an impersonal, inanimate thing, possess and enjoy good things? Certainly not, it will be admitted. What we mean is not that labor, but laborers, should possess and enjoy. But who are laborers? And now at once we may see the mischief wrought by thoughtlessly transferring to the language of science the loose terms of every-day speech. A "laborer," in common parlance, is a man who wears rough clothing, lives hard and works hard through long hours at some manual task for a low wage. That such men are useful, even essential, no one must deny. But are we to understand that men of this class perform all the socially useful work; and that all others, promoters of enterprises, bankers, insurance men, railroad managers, professional men, the official classes and the grand army of of home-keepers are drones, "middlemen," parasites, and social dead-weight? Yet such is the conclusion of some superficial thinkers. To determine, however, whether the socially useful and wholly deserving members of society are confined to the first group, we have only to inquire what would become of society if only the coarser grades of manual labor were hereafter to be performed while the multiplied activities of the second group were permanently suspended.

Though the syllogism, so apparently potent of results, practical as well as theoretical, breaks down at every point, we must not jump to the conclusion that each receives his rightful share in this world. When toilers fester in garrets while those who flaunt their own life-long idleness as a badge of superiority revel in the good things of this life, all, truly, is not well. The principle enunciated by Paul and applied at Jamestown by Captain John Smith with such salutary results, viz., that he who will not work shall not eat, is but an echo of one of nature's own great laws. The cell, the organ, or the limb that becomes inactive wastes away from lack of nourishment and finally dies; while the normally active organ is well fed and thrives. Have we not here the clue to the solution of our problem?

While seeking, meanwhile, as we all should seek, the golden thread that will lead us out of the labyrinth of confused thinking and imperfect living, it is important to remember that as there is a way, so there may be a doctrine, which seemeth right unto a man, but the ends thereof are the ways of death.

#### A MANUAL FOR THE STUDY OF INSECTS.

BY PROF. E. A. POPE.

AMONG the perennially recurring inquiries that come to the desk of an entomologist is one asking for the name of a good general hand-book, or guide, in the science of entomology, and until now this question has been answered that no such work in the English language was to be had. Several works have aspired to fill this position, but with indifferent success. Indeed, the field is so broad that it would be a large book that could answer all the questions proposed by those interested, and it should not be demanded of a single work.

It is now possible, however, to refer students to an elementary treatise that, so far as one book may, comes near meeting the requirements. A Manual for the Study of Insects, of which Professor J. H. Comstock of Cornell University, and Mrs. Anna B. Comstock, are joint authors, is the work to which I refer. It is issued by the Comstock Publishing Company, of Ithaca, N. Y., at the price of \$3.75 per copy.

The aim of this manual is in part to provide beginners with an easy means for the determination,

especially of those forms that are of agricultural interest, and such species are given prominent attention, an outline of their habits, with suggestions for their treatment, being accompanied in most cases by good illustrations of the insect itself.

But the beginner in systematic entomology will find the book most useful. By its means he is enabled with the minimum of labor to determine the order and family of most of the insects that he may find, and in the more important families he may determine, by the aid of the illustrations and descriptions, a great number of the more common species. The analytical tables, which are a prominent feature of the book, are simple, and easy to use, and so far as my examination goes, they are exact and really of service in determination, a most important requisite and one too often lacking in tables of this kind.

A feature of special worth in this manual is found in the abundant and pertinent illustrations. The drawings of insects and the engraving of these drawings on wood was the work of the junior author, who has devoted several years of work to their production. The best of these engravings are indeed of high quality, and are beautiful productions of texture effects that only an entomologist may appreciate. The finest are among the illustrations of the butterflies and moths. Some of the earlier work in this line is less successful, and yet it is better than many of the current figures of insects, and sufficient for the purpose of the work in hand.

Beside the illustrations of the insect itself in its usual form, much space is given to figures of important structural features, as in the venation of the wings in different families, and the advanced student will here find material brought together that will be studied with great advantage and satisfaction. The description of the venation patterns under a uniform terminology only temporarily being some difficulty in the reference to other text-books, but must finally result in greater convenience.

To those whose fear of the "crack-jaw bug names" has kept them from becoming acquainted with the elements of a delightful science, it is a pleasure to say that by the treatment in this work the horrors of nomenclature are reduced to the lowest degree. The authors do not discard these names, it is true; but the careful division into syllables, and marking of accented syllables throughout, will in most cases meet all legitimate objections to the use of the terms that the science finds indispensable.

Certain novelties in classification, of much interest to the scientific entomologist, are of less importance to those for whose information these paragraphs are written, and will not be here discussed.

It may be stated in closing that the work described comes very near to filling the requirements of a cheap, handy, and accurate introduction to the science of entomology, being far the best within the reach of the American student, and one worth a place in every farmer's library.

#### FARMER VS. WHEELMAN.

BY PROF. HOWARD M. JONES.

THE farmer and the wheelman are not colleagues. The wheelman has left the pavement, and has invaded the country. He has encountered the farmer in the country road, and in some cases friction has been generated. The farmer is disposed to put him in the same class with the lawless gunner from town, who is constantly trespassing. Often the wheelman is a "dude;" not unfrequently he is uncivil, knowing that the farmer cannot catch him. He stampedes the stock staked by the roadside; he gives the family dog palpitation of the heart, but worst of all, he frightens teams, and that, too, when women or children are driving. The wheelman's advent has caused many runaways, and some fatal accidents.

The farmer has another serious charge to make against the wheelman. The horse-market, wounded by the electric car, has been killed by the bicycle. All in all, some farmers do not take the wheelman seriously. He is, they think, an idler; his wheel a toy, at best; and when he comes in contact with regular traffic on the highway, he should be made to know his place, namely, "out of the road."

A few facts may not be amiss. The wheelman has come to stay. The output of wheels is astonishing. Factories are springing up on every hand, and running at their utmost capacity. The various makes of wheels are legion. The bicycle is no longer a machine for pleasure only, but is now acknowledged as one of the important vehicles of business. Every month it is displacing thousands of horses. The League of American Wheelmen has members in every State in the Union. This vast membership is devoted to cycling, and will defend its rights in court, if necessary. The League has been one of the most im-

portant factors in the agitation for good roads. The Pope Manufacturing Company (makers of the Columbia) has expended large sums as prizes to encourage the production of "good roads literature." In this movement the farmer and the wheelman should join hands.

Now the wheelman has a grievance or two. He knows that in law he has just as much right to one-half of the beaten track in passing as has the loaded teamster. Yet the reasonable wheelman cheerfully waives that right, knowing that it is easier for him to turn out than for the teamster. But it does gall a wheelman, who is laboriously "pumping" up a long hill, to meet a teamster with an empty wagon who deliberately crowds him into the ditch and makes him dismount. I speak from experience. Moreover, some drivers of timid horses think it their special privilege to swear at a wheelman (I speak from my cycling experience), even when he has given all the road.

In Kansas there has been no legislation, other than municipal, along this line, but a few cases from other States are in order. In Minnesota a wheelman frightened a horse which ran away and wrecked a carriage. The horse owner sued for damages, and the case went to the Supreme Court. The Court ruled that a bicycle had all the rights in the highway that any other vehicle has, and that horse owners meet them at their own risk. Last summer a Chicago drayman ran down a wheelman, and the court awarded ample damages. In New York and Pennsylvania the bicycle has all the rights of other vehicles. Unquestionably the wheelman who insists on having his half of the beaten track will get it, or will get damages in the court if he wants them.

But the law is always the last resort. Let the common courtesy of the road be extended to all, by all, whether driving or cycling, and then there will be no trouble. Mutual concession will preclude mutual irritation. Do not swear at the wheelman. Do not crowd him into the ditch. Do not cut down your hedge, and throw it into the road, where it will puncture his pneumatic tire; and usually you will find him a gentleman, ready to turn out when you are loaded, eager to dismount and lean his wheel against the fence, if necessary, when you are passing with a colt or a foolish old horse.

#### As One Farmer to Another.

A man may work in the fields all his life and be a poor farmer. We should gain knowledge by reading and study, and also by what we see around us, and then this knowledge must be put in practice. Our views, if they will not stand the test of actual experiments, are worthless. All sound theory is based upon practice, and all sensible practice is the result of well-grounded information, whether learned by our own observation or from the experience of others. That theory which will not stand the test of experience is worthless, and that practice which is not based upon sound theory is equally worthless. To produce a given amount of farm products from poor land requires a given amount of labor and other expense. To produce the same amount from land sufficiently well enriched requires only one-third of the same amount. Consequently the expense of labor is reduced, and as the demand is reduced by that great law of demand and supply, the price and labor must go down with it. But the benefit of this does not stop here. The farm produce, when put in market, has cost its producer only one-third of its former expense, so there is a gain of two-thirds of the price of the produce. It is an established fact that no one constituent of the plant food can keep a soil fertile. Some farmers buy freely of phosphatic manures, as bone dust, super-phosphate of lime, and experience good results for a few years, and praise it accordingly. Then the crops fall off and the fertilizer dealer and his goods are denounced. Then some other manure is tried—nitrogenous probably. The change improves the yield, but this in time fails. Perhaps now the farmer gets ashes or other manure containing potash into the system, and with still more marked results, it may be, than with the first use of the other sorts. But this does not last, and he returns in disgust to his stable manure, and again his results are good, for in barn yard manure are all the elements of fertility though usually insufficient in quantity to secure the best results, yet it is the best all purpose manure the farmer can get. Combined with wood ashes, it is the best manure for all kinds of crops, and can be had on any well-regulated farm.—Correspondent Agricultural Epitomist.

#### Good Roads Make Prosperous People.

In the course of his address before the good roads convention in Sacramento the other day, General Roy Stone, Engineer of the Bureau of Roads in the Department of Agriculture, said:—

"The superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of that country. The far-reaching and splendidly maintained road system has distinctly favored the success of the small-landed proprietors, and in their prosperity and ensuing distribution of wealth lies the key to the secret of the wonderful financial vitality and solid prosperity of the French nation."



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address C. E. Goodyear, Loan Commissioner, Oatville, Kan.

**GENERAL LOCAL NOTES.**

About twenty Seniors, equally divided as to sex, picnic at Fort Riley today.

O. L. Utter, who has been preaching at Axtell, was a visitor at college yesterday.

Mr. Christensen, father of G. L. and J. C. of the class of '94, was a visitor on Monday morning.

R. H. Allen, of Chanute, called at the College on Friday on business connected with the sale of some bonds.

Mr. Burtis spends a few days this week at Koshkang, Mo., looking after the fruit prospects in that section.

Mrs. Kedzie enjoyed a brief visit from her father, L. T. Sawyer, of Ottawa, on Friday last as he stopped over between trains.

Miss Radford, State Secretary of the College Y. W. C. A., inspected the work of the College organization last Monday.

C. A. Stephens of Kansas City, Mo., called at the College on Monday last in the interests of a building and loan association.

Mr. and Mrs. Cotton drove up from Wabaunsee on Friday to be present at the public rhetorical exercises of the Third-year Class, of which their daughter Mabel is a member.

Mr. Sylvester Palin, of Alton, Osborne county, was a visitor on Tuesday last. Mr. Palin is enroute to England, where he expects to raise sufficient funds to establish a manual training school to be under the management of the Society of Friends.

A number of graduates and former students have already announced their intention of attending the meeting of the National Educational Association at Denver in July. It is expected that quite a large party will go from Manhattan. Send in your names to Secy. Graham at once.

Miss Ella Green saw the College yesterday for the first time, notwithstanding regular visits to Manhattan for many years as commercial traveler for the Mound City Paint and Color Co. of St. Louis. Now that she has obtained a glimpse of the good things to be found here, she may be expected to call again.

Among the numerous side excursions that are or will be announced in connection with the great educational meeting at Denver, the one offered by the high schools of Greeley, Col., and Cheyenne, Wyo., of a \$3.00 round trip rate from Denver to Cheyenne on Saturday, July 13th, will have attractions for many. This trip will take one through the oldest irrigation districts in the State, since it was claimed by Americans, and will afford time for a visit to the State Normal School at Greeley.

There is general rejoicing among the Cadets over the arrival of the new uniforms, ordered through Elliot and Garretson. They consist of blue cap and blouse and grey trousers. The blouses of the Band uniforms differ from the rest in that they are elaborately decorated with white braid over the breast, shoulders, and arms. It is safe to say that if Memorial Day be fair the Cadets will make a display the like of which has never been witnessed in Manhattan before. The officers of the College and Cadets both express their entire satisfaction as to the quality and fit of the uniforms.

Chapel exercises Friday afternoon consisted of orations by a division of the Third-year Class. The subjects discussed were as follows: "The Pacific Golden Portal," E. G. Gibson; "The Social Pie," Mabel Cotton; "The Universality and Reward of Labor," J. J. Fryhofer; "The Follies of Fashion," Miriam Jones; "Athletics for Students," B. Dougherty; "Be Americans," Joanna Freeman; "Labor and Capitol," G. C. Hall; "Home a Refuge," Grace Secest; "An Aim in Life," G. W. Finley; "Heavy, Heavy Hangs over Your Head," Myrtle Hood; "The Poet's View of It," W. J. Rhoades. A humorous quartet, "He's a Fellow," by Misses Pfuetze, Helder, Lyman, and Selby, was well received.

**GRADUATES AND FORMER STUDENTS.**

C. G. Clark, '88, graduates from the theological department of Yale University this year.

Mary Cottrell, '91, of Wabaunsee, visited her sister and brother in First-year classes on Monday.

E. F. Nichols, '88, now in Berlin, Germany, is re-joining with Mrs. Nichols over a daughter, born May 5th.

Hattie Noyes, '91, and Martha Cottrell, '94, while on their way last week to Chapman, Kansas, to at-

tend a meeting of the Ladies' Missionary Society of the Congregational Church, stopped off to call on College friends.

Rev. J. S. Gould, Third-year in 1887-8, delivered the address of welcome at the Christian Endeavor convention now in session at Wichita.

T. E. Lyon, '93, has gone to Marshall county, which territory he will work this summer in the interests of the Union Library Association of Chicago.

W. H. Olin, '89, Principal of the Osborne Schools, is visiting with friends at the College before entering upon institute work in Pottawatomie County.

Victor Sandt, '94, and wife, of Marysville, are making their home in Manhattan. Mr. Sandt is employed by the Mechanical Department at present.

Nellie Little, '90, and Bessie Little, '91, returned Thursday from New Haven, Connecticut, where they have been pursuing post-graduate studies in Yale University.

W. D. Baird, Second-year in 1888-9, graduated with honorable mention, March 3rd last, at Atlanta (Georgia) Medical College, and is practicing at Kosoma, Indian Territory.

Among the visitors at the Friday afternoon exercises were noted Miss Noyes of Wabaunsee, Mr. J. Jones, and the following graduates: R. J. Brock, '91; A. D. Rice and Lizzie Edwards, '92; Gus Kimball, W. E. Smith, and G. W. Smith, '93.

Dorris Kinney, student in 1889-90, visited College yesterday in company of Florence Beverly. Miss Kinney has made Omaha her home since leaving College. Miss Beverly, who for three years past has clerked in a Manhattan bookstore, finds a welcome change in housekeeping in her father's home.

**Commencement Week.**

Commencement Day this year will be on Wednesday, June 12th. The program for Commencement week is as follows:—

FRIDAY, JUNE 7.

Address before the Literary Societies by Col. L. F. Copeland, of Harrisburg, Pa., at 8 P. M.

SUNDAY, JUNE 9.

Baccalaureate Sermon at 4 P. M., by President Fairchild.

MONDAY, JUNE 10.

Examinations from 9:00 A. M. to 3:20 P. M.

Annual Address, by Dr. F. W. Gaussaull, of Chicago, at 8 P. M.

TUESDAY, JUNE 11.

Examinations from 9:00 A. M. to 12:20 P. M.

Class Day Exercises, for Invited Guests of Class of '95, at 8 P. M.

WEDNESDAY, JUNE 12, COMMENCEMENT DAY.

Graduating Exercises at 9 A. M. and 2 P. M.

Military Drill at 4:30 P. M.

Dinner on Wednesday, Served in Armory Hall, by the Ladies of the Christian Church of Manhattan.

**COLLEGE ORGANIZATIONS.**

*Student Editors.*—Hortensia Harman, C. A. Johnson, J. V. Patten

*Alpha Beta Society.*—President, Nora Fryhofer; Vice-President, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon. Admits to membership both ladies and gentlemen.

*Webster Society.*—President, W. H. Steuart; Vice-President, J. B. Harman; Recording Secretary, J. C. Wilkin; Corresponding Secretary, T. M. Robertson; Treasurer, J. E. Trembly; Critic, E. H. Webster; Marshal, A. G. Wilson; Board of Directors, S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, S. Nichols. Meets every Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Hamilton Society.*—President, W. H. Painter; Vice-President, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, L. A. Fitz; Board of Directors, E. C. Joss, S. Robbins, F. B. Yoder, C. D. Adams, V. Maelzer. Meets on Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Ionian Society.*—President, Flora Day; Vice-President, Mabel Selby; Recording Secretary, Minnie Pincomb; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Critic, Hortensia Harman; Marshal, Mabel Selby; Board of Directors, Laura McKen, Dora Thompson, Mabel Selby. Meets Friday afternoon. Admits to membership ladies only.

May 17th

President Day called the Ionian Society to order at the usual time. Singing. Mary Wilkin led in prayer, after which the Secretary called the roll. Dora Thompson was then installed as member of the Board of Directors. The program was opened with a violin trio by Misses Brockway, Crump, and Walters, Rena Helder at the piano. They rendered well an excellent selection, which was much enjoyed by the Society. The Oracle, edited by Hannah Wetzig, was, although a trifle long, exceedingly bright and interesting. After this Gertie Lyman and Emelia Pfeutze favored the Society with a vocal duet, Rena Helder accompanying them upon the piano. They sang in their usual charming manner. Hope Brady as "News Girl" gave quite a number of very witty items relating to College students. Under extemporaneous speaking, the trials for next week were discussed. A piano solo by Rena Helder was an enjoyable feature of the program. The Society adjourned after the usual business was transacted. W. A. H.

May 18th.

A few vigorous raps of the gavel, in the hands of Vice President Harmon, brought the Websters to order. W. H. Steuart led in devotion. The "Fourth year" program, which was undoubtedly the best of the term, opened with debate on the popular subject, "Compulsory Arbitration." W. H. Steuart had just opened up the affirmative with several good points in favor or arbitration, showing the useless, unnecessary and expensive luxuries of war, when a gentle rap on the door was heard, and in walked about twenty "fair visitors," mostly of the Fourth-year Class. E. C. Trembly in supporting the negative admitted that arbitration was a good substitute for war, but held that war is also a necessity; as the civil war accomplished objects which would never have been settled by arbitration; war is often a benefit, as

shown in the recent Japan and Chinese difficulty. E. H. Freeman's address illustrating the two great laws of evolution was excellent. The program was next enlivened with a piano and violin duet by Miss Olive Wilson and G. W. Fryhofer, which was heartily endorsed. F. J. Smith, in a personified declamation, gave a very pathetic story of the wanderings of "The Black Sheep of the Fold." The impersonation by J. V. Patten of a great man in American history was so perfect that it was not necessary to name the subject—Commodore Vanderbilt. Miss Wilson next favored the Society with a piano selection; responding, also to a hearty encore. F. E. Rader then presented the Webster Reporter, which proved to be an excellent literary production throughout. Among the articles which appeared were "A Custom," "A Small Boy," "A Eulogy," "An Enjoyable Affair," and "Prognostication." After recess, S. A. McDowell delivered the valedictory of the seventeen Websters, members of the graduating class. By request, Hon. Sam Kimble of Manhattan, the "Little Sam" of the Webster Society some twenty years ago, gave the Society some very interesting reminiscences of the early life of the organization, together with some good pointers for the future. T. M. R.

May 17th.

After President Fryhofer called the Alpha Beta Society to order, Miss Carey, accompanied by Bertha Steele at the piano, sang a well appreciated solo. Devotion was conducted by J. J. Fryhofer. Grace Secest and Mary Paddleford, on the program to give "Something New or Old," entertained us with a novel piece of music. "British Encroachment in Venezuela" was the subject of a paper by Charley Shull, showing study and skill in writing. Two of our Ionian friends gave us greeting in form of a vocal solo rendered by Rena Helder, Elsie Crump accompanying at the piano, which was most joyfully received. Three speakers gave their opinion as to "Who was the greatest Character in the World;" Clare Wilson speaking for Luther and H. G. Graves for Franklin, while Mr. Amphlett claimed the victory for Christopher Columbus. Elva Palmer read one of the most remarkable editions of the Gleaner that could be presented, showing the time and work spent in preparing it. A song of original composition that caused laughter and merriment was well sung by a vocal quartette composed of G. L. Clothier, E. P. Smith, Max Spaulding, and A. H. Morgan. Professor Brown, speaking through A. E. Ridenour, presented the Society with a handsome mahogany piano stool, with his greetings. R. W. Clothier in a few chosen words showed well the appreciation of the Society for such a handsome gift, and that we should long remember Professor Brown. After a vocal duet by Elva and Inez Palmer entitled "Sea Bird," the Society adjourned. M. A. L.

May 18th.

While the Hamilton clock was striking eight, President Painter called the house to order. After roll-call, W. O. Peterson led the Society in prayer. John Pool then amused the Society for some time by giving the members a vivid picture of commencement exercises some time in the distant future. John Holland then gave us a recitation entitled "Ostler Joe" which put us in a very sad mood, but Yoder relieved us immediately by reciting an amusing parody on the original. W. E. Hardy then gave an oration on the "Study of Human Nature." By this time the Society was in the proper mood to listen to music, and accordingly C. S. Marty favored us with an instrumental solo and was induced to respond to two encores. Mr. Wolcott gave us a digest of the news of the week, after which Barker read a selection entitled "Joys of an Agricultural Life." Stanley Robbins in a well prepared oration told us something of the life and character of Gen. McClellan. The subject for debate was "Resolved, that the Monroe Doctrine was carried out in the Nicaragua trouble." Messrs. W. I. Joss and Mansfield argued the affirmative, and Messrs. Painter and Wolfe talked on the negative side. The Society decided in favor of the affirmative. After recess H. M. Thomas read an essay on "Mistakes." W. O. Peterson then read us an original poem on "The Spring Poet." Mr. Rogler recited an excellent declamation and responded to an encore by giving us some good violin music. After some routine business, the Society adjourned. The session was probably the best of the year, every member performing all duties assigned him, and more too. C. D. A.

**Library.**

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.



### Why Do Young Men Leave The Farm?

It is to be feared that many young men who have left the farm could not give satisfactory reasons as to why they have done so. And thus it is, probably, with many of those who still desire to leave it. Some of them will answer that the work was hard and the hours were long, but have those who left the farm improved their condition in this respect? Have they not found hours quite as long in their new sphere of labor, and have they not found their labors quite as exacting?

The truth is that, in very many instances, they have left the farm actuated by a spirit of morbid restlessness, a spirit which seems to come to all young men in a greater or less degree as they push onward to stronger and higher manhood. They want to see the world. They want to grow bigger, to shine somewhere in some sphere or another, and to grow great just for the sake of greatness in itself, without any ulterior object in view.

Now, young men, are not these things true? Look down deep into your own hearts, if you are anxious to get away from the farm, and answer, are not these things true? And, if they are allow us to ask you to think twice, yes, three times, four times, five times, before you leave the farm.

You know, young men, that things are not always what they appear. The fine dress of the business man, and his quick step and sprightly manner only show one side of the man. These things don't lay open his brain. They don't show the worry that so often accompanies him into the bedroom and drives sleep from his eyes. Long hours cannot be measured by the actual time that we spend in the fields or behind the counter. They take into the account the hours of thought spent upon the business, whatever it may be, and these may far outnumber the hours actually spent upon the work within the hours of active labor. Thus it is with the lawyer, frequently, and so it is oftentimes with the teacher. But when the farmer's work is done, his worry is done also, as a rule. It may not be always done with the cessation of the labor of the day, for the farm has its worries, but these are light as compared with the worries that beset the business man. We have evidence of this in that longing desire on the part of business men who commenced life on a farm to get back to the farm again during the declining years of their life.

Of those who leave the farm, few ever attain great wealth. It is a fact undisputed by those engaged in mercantile agencies that, of all who engage in business, at least two out of every three fail some time or another while thus employed. The failures among farmers are comparatively rare, not more, probably, than one in a score. It may be that very many of them only make a bare living, but who would not prefer lying down in a grave, poor, but owing no man anything, than to lie down therein owing money which can never be paid?

And, if we gauge prosperity by average wealth, here, again, the comparison is largely in favor of the farmer. The average wealth of the farmer is far greater than that of men in other callings which give employment to the many. In a certain town in the country, we were told not long since that of \$900,000 deposited in the banks, no less than \$500,000 were owned by farmers, and represented earnings made upon the farm.

And, then, think of the character of the work. It is certainly pleasant, except at certain seasons when the weather is adverse. And we know very well that as there is more of day than night, there is more of sunshine and brightness than of shade and darkness. This work is performed very much of the time in the open air, and beneath the glorious sunshine of heaven. In the bright days of spring, and in the early days of autumn, what other callings under heaven can furnish employment so delightful? True, the farm has its stormy days, and it has its troubles, but what calling under heaven has not? And, as a rule, the farmer is not compelled to work in the storm. He is not like the motorman on the street car, the engineer on the railway, or the delivery man of the house of merchandise. He is not bound to go, rain or shine, but he is in a position to control his own work; hence, when the weather is forbidding, he may work in comfort and indoors.

Nothing has yet been said about the opportunities furnished for study and experiment. The opportunities for these will never cease on the farm. They are like the story that will never end. So that, in addition to making a living, there is a chance for every man upon the farm to immortalize himself by working out one or another of the ten thousand problems that are yet unsolved. In the face of these and other truths that have not been said, though of kindred import, why should young men so much desire to get away from the farms?—*Canadian Farm Journal.*

### A Plea for the Birds.

A great pity it is that so many of our beautiful and useful birds are annually killed off by reckless and cruel men, simply for amusement and mere pastime. Shame on such recklessness! It is anything but right and should be frowned upon by all who are humane in their feelings and wish to protect the beautiful and useful in nature. Birds are not only beautiful, but useful.

We love the sweet song of the bird, it has a great attraction for us, but we also value the usefulness of birds in the capacity of insect destroyers; few people realize how much work of this kind they will do. They destroy many harmful insects which might otherwise do great damage. It is a lamentable fact that the spraying of trees and plants with poisonous mixtures is killing off many of our best birds. The time will come when this wholesale poisoning will be

noticed and felt. I sometimes fear some people are too progressive and may see their mistake later. For my part, I use no poison on my place which does any harm to anything but a bug, and I do not care how much he gets of some simple thing which will use him up, but I don't want it done at the expense of any other living thing.

I allow no birds of any kind to be molested or killed on my grounds, and would forbid any one doing such a thing. I am not a crank on birds if I am on horticulture, but I want them to have fair play, and will ever lift my voice in protest against their destruction. I don't begrudge them a few strawberries, or raspberries, for I believe they have earned them. No, I even give the old toad a "pass" into my grounds, and he does his work while I sleep.—*John M. Wise, in Farm, Field, and Fireside.*

### Use the Basement of Your Farm.

Ralph Waldo Emerson is best known to the world as a philosopher and a poet. But while his fame largely rests upon his works along these lines, his writings upon the practical, everyday affairs of life are worthy of more general attention than they have thus far received. Among these writings the charming essay on "Farming," in which he tells of the introduction of the practice of underdraining in Concord, Mass., where he long resided, is well worthy of study by every man who tills the ground. The truth that the soil has a "Basement Story," as he so aptly expressed it, is one which farmers as a class, have been too slow to learn and still slower to make use of for their financial advantage.

Every one who is at all acquainted with agricultural affairs knows that a great deal of the land which has for a long time been under cultivation has lost a portion of its fertility. In many instances this loss has been very great, and fields that were once highly productive, now yield only small returns. Such fields are often spoken of as "exhausted." This term is not strictly correct, though it clearly indicates the apparent condition of the land. In point of fact there are large quantities of plant food in these soils, but the valuable matters are not now in a condition in which they can be used by growing crops. Under the influence of the sunlight, rain, and frost, these materials will slowly become available. If in addition to this natural process of "weathering," the ground is frequently and thoroughly tilled, the time in which the now inert matter will be ready for use will be greatly shortened. Of course, the application of manures or fertilizers, if of suitable kinds and in proper quantities, will enable the owner of such land to obtain good crops from it at once, but as this article has to do with the soil as it is in itself alone the discussion of such a method of treatment does not come within its province.

There are many soils which can be improved only by means of tillage, rest, the plowing under of green plants, or the addition of materials which either exert a chemical influence upon the land, or which in themselves contain the materials which plants require. But there are worn farms without number, which have a "basement story" that is as valuable as ever was the surface soil, and by the utilization of which the land can be made, at very small expense, to produce large crops. There are three methods of utilizing this wealth of material, which has, for generations, been lying undisturbed in the ground. These are underdraining, subsoiling, and the growth of clover or other legumes which send their roots far down into the hitherto undisturbed stores of plant food, and not only render these elements available in large quantities, but also gather nitrogen from the air, and thus add to the soil the most costly element that the farmer has to supply. In some soils all three of these methods can be utilized. In others, underdraining is not required. The direct object to be accomplished is the deepening of the soil. As yet only the surface of the land has been tilled. The plow has loosened the ground to a depth of five or six inches, and the crops which have been grown have sent their roots through this more or less finely pulverized layer, but have not been able to penetrate the underlying stratum in which great quantities of plant food are locked. It is plain that upon such lands deepening of the soil practically adds to the area of the farms.

In the essay to which we have referred, it was said that in Concord, where the soil had been deepened by underdraining, "in this very year, a large quantity of land has been discovered and added to the town without a murmur of complaint, from any quarter." Many a man might now, without giving anyone cause of complaint, discover and add to his farm rich acres, which are practically useless. No title deeds will be required, for these acres are already included in his legal possessions. No extra fences will be needed, and with the exception of a moderate expense for deepening the soil, no cash outlay will be involved. Practically, such a man has two farms, the one he has tilled, and, directly underneath it, another one upon the resources of which he has never drawn. Loosening, with the subsoil plow, the lower stratum of the ground, and underdraining where this work is needed, will allow the air and water to circulate freely through it, and enable them to exert their wonderful chemical and mechanical influences in preparing for the use of crops the large stores of plant food material which this portion of the land contains. Then, year by year, the surface plow can be made a little deeper, and what is now the inert subsoil can be incorporated with and become a component part of the fertile soil of the surface. Thus the cash value of the farm can be greatly augmented, and its productive capacity be wonderfully increased. No argument should be needed to induce anyone who has such a farm to begin at once to take possession of the "basement story," which, up to the present time, he has allowed to remain unoccupied.—*Practical Farmer.*

### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

### MANHATTAN ADVERTISEMENTS.

#### BOOKS AND STATIONERY.

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# THE INDUSTRIALIST.

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### UNITED STATES HISTORY IN THE SCHOOLS.

BY PROF. FRANCIS H. WHITE.

ONE whose position gave him exceptional opportunity for observation remarked to me not long ago that no subject was taught in the common schools of our land so unsatisfactorily as United States history. This opinion will be echoed, I believe, by the best teachers everywhere. But when one considers some of the difficulties under which the average teacher labors,—insufficient preparation, many studies, no access to a well-chosen library,—the wonder is that the work is, on the whole, so well done.

The partial failure in teaching this branch arises from the nature of the subject and lack of special ability. History is complex, requiring for its thorough understanding and clear exposition not only a judicial spirit, extensive information, and a vivid imagination, but also the power of picking out essentials, of grouping kindred facts, of generalization. It does not follow that a teacher who can solve hard problems in mathematics will possess this ability; indeed, we know it is frequently lacking in those who are thoroughly competent in other lines. Yet, in the selection of teachers, the ability to teach mathematics is more likely to be a determining factor than the ability to teach history.

It must be noticed, too, that the attempt is often made to have very immature minds appreciate the civilization of the past, when they are admittedly unable to understand their own times. It is true social life is more complex now, but on the other hand its elements are more familiar.

My own belief is that before the actual study of history is undertaken, the pupil should have gone over the field by the use of a narrative mainly biographical, adapted to the stage of mental development the child has reached—a narrative that will appeal to his imagination and not confuse him with details. As late as possible in the course the more thorough study of history should be commenced, and now the political and industrial development should receive a large share of the attention, though the military history, of course, must not be, and while human nature remains as it is, will not be, neglected.

So many and various are the facts thrust upon the attention, it will be difficult to avoid confusion unless outlines, brief statements of the essentials, are made and memorized. Nor can there be obtained any clear ideas in regard to explorations, settlements, and military campaigns without a close association of every event with the physical features, the geography of the country. The best way is to require the pupil to trace in colors on outline maps the routes of the explorers and the movements of the armies, and to write the name and date of the settlements as they were made.

Essay writing is of great importance in studying history. There are two forms especially helpful. Striking topics, like Washington crossing the Delaware, Life at Valley Forge, Pickett's Charge at Gettysburg, will appeal to the imagination and give an excellent chance for description; while topics like the Slavery Question, the Tariff, the Money Question, will compel the pupil to bring together in chronological order the important events in the history of these questions. Interesting and helpful studies can be made in the lives of some of the noted men.

Another means of securing interest and assuring exact information is requiring pictures to be drawn or traced that will illustrate the implements, arms, houses, etc., etc., in use at the different periods, thus showing the growth of civilization. Drawing thus comes in to supplement word description, and will be found far more effective.

A pupil ought not to be confined to one text-book, and therefore page references should be given to standard histories and so far as possible original sources should be examined. By these means the ability to collect data and weigh arguments without bias or prejudice will be cultivated.

When, however, a teacher attempts to put in operation these and other methods, so much explanation and so many references are required, such an amount of preliminary materials, outlines, tables, maps, charts, etc., must be drawn, that discouragement of both teacher and pupils results, and after a brief trial the old absolute reliance on the text, and the simple hearing of recitations from it, begin again.

Realizing from experience all these difficulties, while teaching the preparatory classes in United States History at this College, and being unable to find the material needed in available form, I have prepared a book which will be issued from the press

in a few weeks, entitled, "Pupil's Outline Studies in United States History." This gives outline maps, charts, tables, outlines for essays, book references, etc., with full directions for the pupil and suggestions to the teacher. It is the earnest hope of the author that if this book does not answer the purpose and give sufficient assistance to the over-worked and perhaps poorly prepared teacher, it will at least stimulate others to make a somewhat similar book that will be satisfactory.

### WEED NOTES.

BY J. B. S. NORTON, '96.

OWING to the extended drought the past year, when weeds attained to a greater development than many cultivated crops, and owing to the introduction and spread of new and formidable weeds, many experiment stations have given more than usual attention to this line of investigation. Several bulletins have appeared this year on different phases of the weed question. The Botanical Department of this Station has now almost ready for press a bulletin on the seedlings of Kansas weeds. During the past two or three years seeds of Kansas weeds have been collected, planted, and drawings made of the young plants, usually in the stage showing as much as possible all the young organs—hypocotyl, stem, cotyledon, and the different forms of young leaves. Along with these a large number of seedling plants not included among weeds have also been studied. As much as possible the seedlings for drawing and description have been obtained from the field where they germinated under natural conditions.

The bulletin will contain descriptions of about seventy young weeds, several plates showing figures of nearly 150 seedlings, and a key to our weeds based on the characters of the young plants by which any one can know his plant enemies before they reach a dangerous size. The form of the young plant organs is characteristic of the different species, but they vary greatly in size according as they are produced under different conditions. The length of the hypocotyl—the stem below the seed-leaves—varies greatly in its effort to bring the leaves into the light when the seed is covered by different depths of soil or when the plants grow crowded together or in shaded situations.

Many other notes have been taken relating to weeds which will probably form a part of future bulletins. Many interesting results have been obtained from notes on the growth, flowering, time of ripening seed, the size of plants, number of seeds produced, and the dissemination of the seeds of our worst weeds. Also, experiments with germinating the seeds naturally found in different soils taken from various fields and localities, and counts of the weeds germinating on a small plot of ground for several years, bid fair to add to our knowledge of germination and dissemination of weed seeds.

The records of the time of germination show that most of the weed seeds have a more or less definite germination period. Most of them come up in the spring. Some weeds, as the purslane and others, however, germinate at almost any favorable time during the summer. The biennial weeds, as most *Compositae* and *Cruciferae*, usually germinate in the fall, live over winter in the rosette stage, and flower the next year; yet many of these may germinate in the spring and flower the same year, thus becoming annuals. It may be noticed that many of our worst weeds live several years by means of underground stems. Some of them propagate themselves by this means even more readily than by seeds; indeed, the seedlings of some, as for example, species of *Convolvulus*, *Solanum Carolinense* (horse nettle), and *Polygonum Mublenbergii* (black heart) are scarcely ever found. The seeds produced are probably not formed for such certain germination as those of annuals which depend on their seeds alone for propagation.

Observation will show that several eastern weeds are becoming more abundant here each year. This is especially true of the tame grass fields where the weeds are introduced through grass seed obtained from other localities. Seeds of a number of varieties of grasses, other forage plants, and garden vegetables purchased by the Farm and Horticultural Departments for planting this spring, and supposed to be clean, have been examined, and weed seeds of various kinds were found in considerable abundance, especially in the grass seeds. It remains to be discovered whether any of these will germinate and gain a foot hold in the fields where they were sown.

A few western plants are becoming more abundant



here. They had a more favorable opportunity to get a start last year, being better adapted to dry weather, and take the place of others that could not withstand the drouth. *Schedonnardus Texanus*, a grass common in western Kansas but a few years ago, found only in a few places here, is now common along many roadsides. It might be interesting to mention that a few specimens of Russian thistle were found this spring by students beside the railroad west of Manhattan, near where this plant was found last year.

### THE PROVINCE OF LITERARY SOCIETIES.

BY INEZ PALMER, 96.

IN thinking of the essentials of an education we cannot well afford to neglect the literary part; and in a college like our own where science, art, and the industries prevail, there has grown up with it and within it this necessity—literary societies.

Other colleges having more literary work than our course affords, find such societies essential to a growth and development that might otherwise be neglected: the training in forcible, logical, and correct thought and expression.

Nowhere in the course do we come so in contact with such a variety of qualities, opinions, and eccentricities as in the society.

Here Senior and Freshman meet on an equal footing, and their influence is as nearly equal as they may choose to make it. Here some of us for the first time, perhaps, are brought to believe that there are two sides to every question, and that other people have thought on the opposite side of the question and are equally capable of defending their position.

That the college recognizes the need of some supplementary literary training, is shown from the fact that we meet once a week in rhetorical exercises. But this is insufficient, and not all together in the line of successful literary training, as there necessarily exists that lack of variety which makes the society so pleasant and profitable. For illustration, we have never yet heard music, informal speaking, or free discussion to any extent in rhetoricals, neither is there any drill in parliamentary law, which is very essential to a well-regulated society.

Our privileges in a literary society are not properly appreciated by many who take them as a matter of course, while really they are a matter outside the course, and should be used for our best growth and progress. Compare the work done here with that of any other society you may have been connected with (unless at some equally good college, which it is supposed you have not yet found), and at once you will see the difference. Nowhere have we been surrounded with so earnest, wide-awake students, each doing his best to promote the interests of his society, so that we scarcely note the effort it takes to carry it on successfully. Here also we have the benefit of healthful competition with other societies. This helps each to keep the rough edges polished smooth, and it furnishes the necessary material for cross-firing, which in this case is perfectly harmless.

For students, holidays and days of rest are few, and we can look for rest only in its true sense, a change of work; and this change to that of society work is one of the pleasantest among college duties. The relation between the college and its societies is a friendly one, and the help each affords the other is mutual.

The literary society is the very workshop, the art-gallery of the college, where literary rules and precedents are practiced. It is what the kitchen is to the household economist; the farm or garden, to the agriculturist. It is the training ground of the literary field, and more than this, it is the very border-land of the work-a-day world we must all soon enter, whether we are prepared or not.

Then the question we still find confronting us is not how much we know, but what can we do. Since mere knowledge is not education, but tact in using or applying knowledge is the necessary part, is it not then wise to secure such training as will make us most ready and efficient in life's work?

### The Ideal Farm Home.

There must of necessity always be a wide difference between the ideal and the actual. The man whose ideas are not far in advance of anything that he has yet realized will never make very rapid advances. "He aims too low who aims beneath the stars." This is true in personal character, in methods of farming, in the breeds of live-stock, and in the home itself. If, therefore, our homes are far below what we would like, there is all the more room for improvement.

A great approximation toward the ideal home can be made by any farmer with very little labor and expense. The first requisite in an ideal is permanency. Farming in the west is a good deal like the tabernacle of the wanderings as contrasted with Solomon's temple. So long as the farm is for sale at any price, so long as the suspicion lurks in the mind that the

garden of Eden is in the next county or in some other State, so long will the ideal home be impossible. The first requisite is permanency. The quaint lines of the psalmist,

This is my rest, here will I stay,  
For I do like it well,

might very appropriately be inscribed on the lintel and door post of every farm home.

After this resolution has been made, the next thing to do is to grow protection. There can be no ideal home on the wind-swept prairie. The sense of nakedness, of exposure, the lack of the ornament, the shelter, and protection that trees alone can give will inevitably rob the home of its charms. Plant trees if you would have an ideal home. Plant plenty of them; plant them in broad belts to the north and west, and more sparingly to the south and east. Plant those on the north and west far enough to drop the snow west and north of your house and yards. Leave at least six or eight rods of clear space. Better leave ten rods, and then inside of these at, say six rods, plant your evergreens. Plant plenty of them.

### Wide Tires for Wagons

When I see a man digging up the roads, by hauling a heavy load on a narrow truck wagon, I feel much as the inveterate swearer did when the boys, hoping to provoke him to his best efforts along the line of profanity, removed the end board from his wagon box when he was hauling a load of cider apples up hill. When the old man reached the top and saw his apples distributed all the way down the hill, he surprised the boys by simply removing his hat and saying: "Boys, there is no use, I can't do justice to the occasion." The road question seems to be growing in interest in this section. The problem how to get good roads and keep them in repair is surely a hard one to solve. In my opinion, if some plan could be settled upon that would result in the wide-tire wagons taking the place of the narrow ones now in use for hauling heavy loads, a long stride would be made toward the end desired. A large majority of the farmers with whom I have talked agree that if all would use the wide tire, the roads that are good could be kept in repair with a small outlay of work, and those that are poor would be even bettered by their use. The most of them would be glad if a law was passed that would result in the annihilation of the narrow tire wagon for hauling loads.

So far as I have been able to get an expression from the farmers and business men, the plan to levy a money tax on each narrow-tire wagon used for hauling loads, meets with favor. All money received from this source, of course, would be used to improve the highway.

Such a law certainly would be just and fair, for it would simply force those who injure the roads in the manner referred to, to make good the damage done by them. I have had an experience in road making the past summer, which, in my mind, settled the question most decidedly in favor of the wide tire. With our district tax and some donations, we were able to grade and clay about one-half mile of very sandy road. All but two who assisted in hauling the clay used the wide tire. We commenced dumping the clay at a point on the road nearest the pit, so it was necessary to draw the loads over the newly made road.

What I wish to make clear is found in the injury done by narrow tires—the fact that this made road would be nicely packed and put in good shape for use by a few of the loads on the wide-tire wagons being drawn over it, but would be pretty thoroughly dug up by the two loads drawn on the narrow tire. It is a fact that this piece of road would have been kept in good condition all summer and fall with a small outlay of work, could the narrow tire wagons been kept off of it. With their use it has been almost impossible to keep it in shape.

Often we would hear the remark, "What is the use of working to get the roads in shape as long as the narrow tire is in use?" Surely they have a very discouraging influence over the hopes of getting good roads. The law allowing one-fourth on the tax to those who use the wide tire has seemed to do but little good. Had that law been amended by increasing the tax of those who continued to use the narrow tire by one-fourth, and that to be paid in money, I think it would have been more effective.

I am so glad that you have taken up the fight for better roads. I wish I was able to help you in some practical way.—*Correspondent Grange Visitor.*

### Don't Let Horses Gnaw Trees.

One of the most grievous injuries that is done to our shade trees is caused by the gnawing of the bark by horses. This gnawing is for the most part done in spring, when the tree is full of sap. The bark is then most inviting to the animal's appetite, and it is at that time that the most damage may be done to the tree. When such a wound has been made in a tree it grows rapidly, the trunk becomes terribly disfigured, and the tree is seen to be slowly dying. As soon as the trunk has been stripped of its bark in one spot the solid wood of the tree, being exposed to the weather and without nature's protection, soon dies, and as it crumbles away each year a new layer is exposed to the air until the gaping wound eats to the very heart of the tree. Many of the fine trees that once gave welcome shade have been felled simply because a glaring wound in their trunks, caused by this gnawing by horses, has rendered them a menace to the passerby.—*Orange Judd Farmer.*

### FARM NOTES FROM VARIOUS RESOURCES.

There are too many joyless boyhoods on the farms of the land to inculcate any great love for agriculture in the youthful generation.—*Webb Donnell.*

"If I cannot do anything else I will go to farming." He went. Later on he was seen planting eggs, and asked whether it was best to plant them in hills or drills. This is fancy farming and for pleasure.—*Live-Stock Indicator.*

The farmer who would be successful cannot sleep. Dr. Lawes, the eminent English experimenter, puts the truth in a nutshell when he says: "I know of no way in which impoverished soil can ever be restored from its own resources. Nothing lives which is not fed."

Give the crops the best of intelligent care from start to finish, and there are nine chances out of ten that we shall get a good crop for our pains. That man has the best prospect for a successful season on the farm who has his work well in hand, and has no inclination to overreach himself in his desire to cover too much ground.—*Rural Canadian.*

A familiar bill in past sessions at Albany makes it a felony for one man to entice away his neighbor's bees. It was introduced in all seriousness, but was killed by a Tammany leader who amended it twice. First, that each bee should wear a collar, and, second, that it should have the name and address of its owner stamped on its business end for identification.—*Farmers' Review.*

How to supply and preserve nitrogen in the soil, which is so necessary for the completion of a plant, whether for forage, fruit, seed, or fibre, has long been a leading study with agricultural chemists. It is settled that the pod-producing family of plants—peas, beans, clover, alfalfa, etc.—absorb nitrogen from the air, and there is a fuller growth of the cereals which follow them.—*Rural Canadian.*

It is necessary for men who engage in manual labor often to wear soiled garments, but if they have the instincts of gentlemen they will wear them no longer than necessary. Few men are so situated that they cannot in their moments of leisure appear neat and clean, if they care to do so, and instead of any foolish quackery about "the honorable signs of labor," we need a little healthy sentiment in favor of cleanliness and decency. We need to realize thoroughly that a house without a bath-room is a disgrace to civilization; we'll be able to work better and work longer if we once learn that.—*Womankind.*

To a greater degree than men who are engaged in most other occupations which require the use of the hands as well as of the mind, the farmer is working for the future. While he hopes and expects soon to receive a part of the reward for his labor, he knows that a considerable portion of the returns for his work cannot be obtained for months, or even for years. The man who thoroughly prepares the soil to receive the seed for a crop of corn or potatoes, not only does much to promote the growth of the crop which he will remove this year, but also does a good deal to benefit the crop which is to be grown on the same land next year.—*Practical Farmer.*

The garden may be made a source of real profit; small fruits can also be made a great source of revenue on small farms. When prices of raspberries and blackberries, etc., are not high enough to pay, they can be dried or evaporated, and will bring paying prices in due season. Poultry and eggs, butter and cheese, wool, mutton, and lambs, root crops, winter squashes, cabbages, cauliflower, herbs, and many other things can have special attention given to them on small farms. These will all be money crops, and having something to sell is the proper way to farm. Those who have lived on large farms and raised merely corn, wheat, and a little grass, keeping a few ordinary cows and never knowing the pleasure and benefit of a good garden, if they will concentrate their efforts as advised, will add not only health and happiness, but years to their lives.

Few things are more valuable than mistakes. Farmers, like other men, are quite ready to give the results of experiments that are successful, but are quite unwilling to give the results of experiments that have been failures. They are apt to feel that a mistake or a failure to accomplish any definite object upon which the heart has been set is somehow a reflection on their own sagacity or ability, hence a vast amount of knowledge that would be extremely useful is carefully kept out of sight. This is altogether a mistaken view of the matter. It is a mistake to conceal our mistakes and failures. It is also a mistake to report them incompletely; that is, without a full understanding of the circumstances and conditions. No one can interpret a failure or mistake properly unless he has all the elements in the problem of interpretation clearly before him.—*Live-Stock Indicator.*

Experience is often a dear school, but some foolish folks will learn in no other. Then counsel all young men with common sense enough to leave the city or the pursuit of some other vocation for this noblest calling, to go at it in such a manner as to soon master its difficulties. If our leading agriculturists would choose their necessary help from among the worthiest of this class, what good and happy results would follow. Poor help is one of the great reasons for the lack of progress in this and other callings. Many farmers in this and other towns are in the old ruts their fathers left them knee deep in, going over the ground thousands have trod before them, instead of beginning where they left off, and striving for something near perfection. With old wounds and other disabilities, this city chap has no trouble in keeping up with or gaining on some of the above.—*Moses A. Wood, in New Hampshire Mirror and Farmer.*



**Calendar.**

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20st.

**To School Officers.**

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address C. E. Goodyear, Loan Commissioner, Oatville, Kan.

**GENERAL LOCAL NOTES.**

Two thousand Commencement invitations are issued this week.

Asa Smith, Third-year, spent Saturday and Sunday at home in Osborne.

Mr. Henry Litts, of the Topeka Capital, was a visitor on Saturday afternoon.

Mr. and Mrs. Swingle and Mr. and Mrs. Carleton were among the visitors at Chapel exercises yesterday afternoon.

Mrs. Supt. Thompson, Mr. Havens, Hilda Walters, Marie Haulenbeck and Jennie Selby attended the exercises Friday afternoon.

Hugh Mattoon has the thanks of everybody for a highly artistic lot of calendars which we have lately received from his typewriter headquarters at Topeka.

Ex-Regent T. P. Moore, of Holton, was honored by being elected President of the State Bankers' Association at its annual meeting held in Topeka last week.

The College Ball Club went to St. Marys last Saturday to play the Academy of the Sacred Heart. Both clubs played good ball. St. Marys won by a score of 12 to 8.

Capt. and Mrs. McCaskey, of Fort Leavenworth, spent a day last week with their son, a First-year student. The Captain will shortly be made a Major, if rumor has it right.

Mr. Joel Carey and his friend Mr. Kirk were visitors in the various departments on Friday. Mr. Kirk is engaged upon the geological survey undertaken by the State University.

The band boys deserve a great deal of credit for their part in the exercises of Memorial day. In the opinion of all it is the best band they ever had at the College.—*Nationalist*.

The Horticultural Department finds a ready market at good prices for the thousands of boxes of fine strawberries being picked from the experimental plats. Both yield and quality of fruit are very satisfactory.

Lieut. J. E. Brady spent Sunday with his brother, Archdeacon Brady, and was a visitor at the College on Monday. He has just returned with his command from Arizona to take up residence at Ft. Riley. He expects to finish his post-graduate work at Fort Leavenworth in June.

Mr. C. G. Howard accompanied his son Jasper M. about the College on Friday. The younger Mr. Howard was a student in this institution in 1877, and takes great interest in the growth of the College and the good work done here.

Prof. Failyer spent last week at the irrigation station near Garden City. The scarcity of water makes it necessary to sink the irrigating well deeper, if boring shows a sufficient supply below. There is no water in the Arkansas River at Garden City.

Capt. McClernand, of the First Cavalry, inspected the College Battalion on Wednesday afternoon. The Cadets made a fine showing in their new uniforms, and drilled in a manner to quicken the heartbeats of a veteran. The inspector had many good words for the Battalion and Capt. Cavanaugh, the Professor of Military Science and Tactics.

Two hundred electric incandescent lamps of sixteen candle-power are in place in the chapel. A row encircles the proscenium opening, another reaches across the room below the gallery rail, two large circles are suspended from the ceiling, and other lamps are scattered about under the gallery, on the stage, and in the ante rooms. The appropriation of \$500 is barely sufficient for the lighting of this one room.

The usual mid-term social of the College on Wednesday evening was well attended by a jolly crowd of students who are invited once each term to lay aside the thoughtful care of books and study to enjoy the pleasant and profitable lessons found only in social intercourse. Several of the Professors were present without their usual real or imaginary classroom reserve and dignity, to engage in friendly chat with the students. For the first time the Chapel was illuminated by electricity instead of gas. The formal entertainment of the evening was furnished by the ladies' Calisthenics class. It consisted of Indian club and dumb-bell exercises, all of which were very beautifully executed. An exceedingly amusing affair was their attempt to "play soldier," in which they wore long ulsters for uniforms, and went through the manual of arms, fixing bayonets and shooting, using parasols for guns. The rest of the evening was devoted to the "social" part, in which each was at liberty to provide such entertainment for himself as seemed best. A committee of Y. W. C. A. and Y. M.

C. A. had charge of the Society rooms, and suggested games for the amusement of all who desired. Every one seemed to enjoy a pleasant evening, and in spite of the efforts of some to discourage the College Social as a big failure, all who attended were certainly benefited.

Word comes from Pine Bluff, Ark., that the International Apron Bazar was a complete success, and that the apron contributed by the Sewing Department of this College, and designed and made by the Post-graduate girls under direction of Mrs. Winchip, was the most elaborate and beautifully wrought piece in the exhibit. It was sold for \$5 to Mr. W. W. Carney, of Leavenworth, son of Ex-Gov. Carney. The apron in question was made from the finest of white muslin, and across the bottom ran a deep border of sunflowers in natural colors, with the inscription, "I want to be in Kansas when the sunflowers bloom," woven skilfully between. The ends of the strings were similarly ornamented. To Bertha S. Kimball, Class of '90, belongs the credit for design and lettering.

The decoration day services were supplemented in chapel Friday by commemorative services given by the last division of the Third-years. Their subjects were: "The Horrors of the War," May Bowen; "The Lost Cause: Its Glory and Its Shame," Cora Atwell; "The Blue and the Grey," A. P. Carnahan; "Woman's Work in the War," Maggie Carleton; "The Spirit of Lincoln," W. A. Coe; "How to Teach Patriotism," W. A. Cavanaugh; "The Pension Roll a Roll of Honor," Gertrude Havens; "Decoration Day: Its Pathos and Eloquence," Miriam Swingle; "A New Brotherhood," E. A. Powell. The Band opened the exercises by playing "Marching Through Georgia," played interludes of "Dixey" and "Yankee Doodle," and closed with "America." The stage was appropriately decorated.

In response to the invitation from the G. A. R., the College Battalion took part in the morning exercises of Decoration Day. The boys looked their very best in their new uniforms, and three companies of more soldierly bearing men were never seen than those which marched from College down Poyntz Avenue on Thursday morning. The Battalion was preceded by the Cadet Band; and all was commanded by Capt. Cavanaugh, who with his aids, was mounted. Although the rain broke up the parade, the boys found no shelter until they reached the armory, having marched all the way to the College through the pouring rain. They were sorry to have their new uniforms thoroughly soaked so soon, but were glad that the ground was being soaked as well.

In its report of the May Festival, the Manhattan Nationalist says of a member of our Faculty: "One thing the Choral Club concert demonstrated clearly enough, and that is that Manhattan's young people do not need to go to other cities in order to study and learn music. The foundation of a thorough knowledge of the art and science of vocal and instrumental music can be laid here. No city in the State can boast a more enthusiastic and devoted lover of classical music than Prof. Brown, nor a director who can take inexperienced and unpracticed singers and bring more music out of them than the Professor. His skill and tact were evident from the performances of the Cadet Band, composed of college boys, and the Ionian Orchestra, composed of college girls. The taste and force shown by the overtures they played tells plainly what their instruction has been. The Choral Club under Prof. Brown's leadership are proposing to give the city two musical 'events' next year. The plan is to present specimens of the finest oratorio and opera chorus work, interspersed with classic orchestral numbers, with part songs, etc. Every number will be a classic, and if the May Festival is any indication, the public may expect a rare treat at Christmas."

**Library.**

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the bookshelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

**Industrial Training.**

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.

**GRADUATES AND FORMER STUDENTS.**

Thirty graduates were counted at the social Wednesday evening.

W. J. Griffing, '83, with his wife and mother, visited College Tuesday morning.

Miss Prescott, of Salina, in company of her cousin, Mary C. Lee, '89, were callers on Friday.

E. J. Abell, Fourth-year in 1892-3, joins the Class of '95 to graduate. He is Principal of the Scottsville Schools.

J. D. Riddell, '93, stopped at the College a few days this week on his way home from the Kansas City Medical College.

Geo. L. Clothier, '92, Post-graduate, and R. W. Clothier, Second-year, enjoyed a visit from their sister yesterday.

Myrtle Whaley, Second-year in 1891-2, visited College several days this week. She is a successful teacher in the Manhattan Schools.

Marie Stewart, student in 1889-90, visited at the College Wednesday. Miss Stewart has just closed a very successful term in the Vermillion school.

Gertrude M. Huntington, student in 1883, is now County Superintendent of Public Instruction of Carbon County, Wyoming, with headquarters at Saratoga.

D. W. Working, '88, has recently been re-elected Secretary of the State Board of Agriculture of Colorado, with headquarters at the Agricultural College at Fort Collins.

A pleasant little party consisting of R. J. Brock, '91, Mayme Houghton, '91, J. D. Riddell, '93, Florence Beverly, and Dorris Kinney occupied seats in the Chapel on Friday morning.

K. C. Davis, '91, Principal of Schools at Austin, Minn., writes regretting that he cannot be present at Commencement exercises. He will conduct an institute at Waseca, Minn., in July.

G. E. Stoker, '90, spent the better part of two days in Manhattan this week and attended the College social Wednesday evening. He and his law partner, C. J. Dobbs, '90, are ever busy at their office in Topeka.

Ben Skinner, '91, writes from Kansas City of success in medicine, he having recently made first standing, with an average of 93½ in a class of over fifty. He is at present doing nurse work and taking extra study at the City Hospital. He hopes to finish his work here for the Master's degree.

Mark A. Carleton, '87, special agent cereal diseases, U. S. Department of Agriculture, writes of successful progress of his work at Washington, D. C. He now has under cultivation 970 distinct varieties of cereals, collected from every wheat country of the world. His "farm" is at Garrett Park, Maryland.

**The Surprise Party.**

Last night the Class of '95 met, probably for the last time as a class gathering. The occasion was a surprise party given by Mr. and Mrs. Cress at their beautiful little home on Houston Street to our most honored classmate, Miss Hortensia Harman.

Shortly before the appointed hour the class began to arrive, and were ushered into the east room to await the decisive moment. Nothing about the place betrayed any unusual occasion. A lamp which lighted up the west room showed but dimly into the east room where sat the waiting Seniors almost breathless. In the front yard, arrayed in evening attire and with rake in hand, was the friend of the guest, Miss Alverta Cress, who was pretending to rake the lately mown grass by the soft, silvery light of a southern moon. At eight o'clock the guest arrived, and a few minutes later stood face to face with her classmates and friends. No one who saw the expression of her face needed further evidence that the surprise was complete. For several minutes there was confusion, while merry rings of laughter filled the house. When all became quiet again games of suitable nature were indulged in until half past ten, when ice cream and cake were served.

A short program occupied the remaining time. The first was a toast to Miss Harman by Mr. Cress, who welcomed the Class of '95, and especially as we were classmates of their friend. In response, Miss Harman thanked them for their kindness toward her and expressed her friendly feeling toward the Class.

Next, in a toast to the Class of '95, Miss Jennie Smith, '94, told of their many good and characteristic qualities in her usual good-natured, jovial way. It was ably responded to by T. W. Morse. The program was closed by a well-rendered piano solo by the class musician, Miss Olive Wilson.

All were then entertained for a few minutes by watching the spasmodic contortions of George Fryhofer's face while he gave several short impersonations. The entertaining committee, consisting of Jennie Smith, Stella Kimball, Belle Frisbie, Rena Helder, Alverta Cress, all of the Class of '94, did their work so well that it was nigh onto June ere we were aware. After bidding good-night to the host and hostess, the Class departed feeling that they had been royally entertained.

J. J. J.



## COLLEGE ORGANIZATIONS.

*Student Editors.*—Hortensia Harman, C. A. Johnson, J. V. Patten

*Alpha Beta Society.*—President, Nora Fryhofer; Vice-President, A. H. Morgan; Recording Secretary, Inez Palmer; Corresponding Secretary, M. A. Limbocker; Treasurer, E. Shellenbaum; Critic, G. W. Fryhofer; Marshal, Mabel Anderson; Board of Directors, A. C. Peck, Fannie Parkinson, A. E. Ridenour, R. W. Clothier, J. B. S. Norton, Gertrude Havens, Nora Fryhofer. Meets Friday afternoon. Admits to membership both ladies and gentlemen.

*Webster Society.*—President, W. H. Steuart; Vice-President, J. B. Harman; Recording Secretary, J. C. Wilkin; Corresponding Secretary, T. M. Robertson; Treasurer, J. E. Trembley; Critic, E. H. Webster; Marshal, A. G. Wilson; Board of Directors, S. A. McDowell, L. W. Hayes, H. J. Robison, C. E. Willey, S. Nichols. Meets every Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Hamilton Society.*—President, W. H. Painter; Vice-President, J. Poole; Recording Secretary, G. W. Finley; Corresponding Secretary, J. W. Holland; Treasurer, Wm. Poole; Critic, O. A. Otten; Marshal, L. A. Fitz; Board of Directors, E. C. Joss, S. Robbins, F. B. Yoder, C. D. Adams, V. Maelzer. Meets on Saturday evening at 8 o'clock. Admits to membership gentlemen only.

*Ionian Society.*—President, Flora Day; Vice-President, Mabel Selby; Recording Secretary, Minnie Pincomb; Corresponding Secretary, Winifred Houghton; Treasurer, Mabel Gillespie; Critic, Hortensia Harman; Marshal, Mabel Selby; Board of Directors, Laura McKeen, Dora Thompson, Mabel Selby. Meets Friday afternoon. Admits to membership ladies only.

May 24th.

The Alpha Beta Society was called to order at the usual hour. A. E. Ridenour, Elva Palmer, and A. E. Powell made up a mandolin club which rendered a beautiful selection. Smith Norton led in devotion. "Society Work" was the theme of an oration written and delivered by W. E. Thackrey, giving good hints as to how it should be conducted to receive the most benefit. A. H. Morgan and Inez Palmer in a discussion on the subject of "Reconstruction in the South," were instructive and entertaining. A male quartette composed G. L. Clothier, E. P. Smith, Max Spaulding, and A. H. Morgan entertained us highly with a selection of music. The Gleaner was full of good pieces and spicy thoughts, showing much work in preparation by its editor, Josephine Wilder. Another song was listened to with pleasure, being rendered by a mixed quartette composed of E. J. Abell, Inez Palmer, E. P. Smith, and Elva Palmer. The Alpha Beta orchestra formed a circle in front and let its melodious tones be heard for a short time. Under informal speaking, Etta Ridenour presented some arguments in favor of summer schools. E. P. Smith talked on the "Big Trees of California," which, with the illustrations presented, was very interesting. O. L. Utter, '86, an old Alpha Beta, being present, was called upon for a speech, and in a few well-chosen words, encouraged the Society to greater progress.

M. A. L.

May 25th.

At eight o'clock the sound of the gavel called the Hamiltons to order. Roll-call showed a small attendance. S. Adams offered prayer. After the reading of the minutes, F. D. Waters opened the program with a declamation. Following this, W. A. Coe read a laughable story entitled, "An experience with a Mouse," from Joshua Jenkins. The debate on the question, "Resolved, that the Arctic Explorations have been justified in their results," was argued affirmatively by G. F. Farley and A. W. Staver, negatively, by H. M. Thomas and A. D. Whipple. Many good points were brought out on both sides. The Society decided in favor of the negative. The fortunes of the two principal characters in George Eliot's *Romola* were related in a very interesting manner by R. J. Barnett. M. D. Heckert next gave a discussion on the backward movement of small towns. This was very instructive and interesting. This finished the program. Under unfinished business, the committee on annual speaker reported that Mr. Copeland, a lecturer of wide repute, had been secured. The furnishing fund committee reported that quite a number of honorary members had contributed to our furnishing fund. Under new business, we indulged in the most spirited discussion of the term. Adjournment put an end to the discussion.

J. W. H.

May 25th.

The Websters were called to order on time, as usual, by Vice President Harman. After roll call, J. B. Dorman led in devotion. The question for debate, "Have We Equality of Opportunity in Life?" was argued affirmatively by C. E. Willey and G. H. Lechner; on the negative, by H. E. Moore and Geo. McDowell. The affirmative, in stating their case, held that all men are born equal. "Equal rights to all and special privileges to none," has always been the aim of this nation; we have religious equality, financial equality, equality before the law and equality in our public school system." The negative endeavored to prove, that although we do have equal rights, this does not necessarily indicate that we have equal opportunities; our opportunities are regulated by our position in life. True, all have equal right to an education under the public school law, but many are not so situated that they may enjoy that right. The tie vote of the Society showed how well each side had been supported. The music committee being off on a picnic, that part of the program was dispensed with. J. B. Dorman, in a well-delivered oration, gave the Society some practical hints on "The Study of Nature" from a naturalist's standpoint. A. B. Newell's declamation, a selection from "Ben Hur," was well rendered and something above the average. The humorous select reading by B. R. Hull, the plot of which was situated somewhere in the "Rockies," kept the Society in a smiling mood for several minutes. The discussion, by T. M. Robertson, on the recent "China-Japan" difficulties, brought out quite a lively debate under general discussion. After the usual routine of business, the Society adjourned.

T. M. R.

## Weather Report for May, 1895.

BY C. M. BREESE, OBSERVER.

The warm, dry weather characteristic of April continued through May. As a result, the fruit prospects, which were promising at the beginning of the month, are at the close very poor. Early sown oats will be almost a total failure; the later sown, with favorable conditions hereafter, will still make a fair crop. Grass is quite good in the pastures, and stock is doing well, but water is very scarce. Corn is generally a good stand, free from weeds, and promising well at the present time. A heavy frost on the 12th did considerable damage to the tender garden vegetables.

*Temperature.*—The mean temperature was 66.70°, which is 2.71° above normal. There have been 10 warmer and 27 cooler Mays in our record. The highest temperature was 101°, on the 28th; the lowest, 33°, on the 12th—a monthly range of 68°. The greatest daily range was 47°, on the 12th; the least, 15°, on the 4th. The mean daily range was 30°. The warmest day was the 28th, the mean temperature being 86.50°. The coldest day was the 11th, the mean temperature being 51.25°. The mean temperature at 7 A. M. was 59.39°; at 2 P. M., 79.42°; at 9 P. M., 64.00°. The mean of the maximum thermometer was 83.58°; of the minimum, 53.22°, the mean of these two being 68.40°.

*Barometer.*—The mean pressure for the month was 28.758 inches, which is .038 above normal. The maximum was 29.152 inches, at 7 A. M. on the 11th; the minimum, 28.289 inches, at 9 P. M. on the 27th; monthly range, .863 inch. The mean at 7 A. M. was 28.789 inches; at 2 P. M., 28.74 inches; at 9 P. M., 28.745 inches.

*Cloudiness.*—The per cent of cloudiness was 33.88. This is 9.12 per cent below the normal. The per cent at 7 A. M. was 38.7; at 2 P. M., 41.93; at 9 P. M., 21. Two days were entirely cloudy; two were five-sixths cloudy; seven were one-half cloudy; eight were one-third cloudy; four were one-sixth cloudy, and eight were clear.

*Precipitation.*—The total rainfall was 3.02 inches. This is 1.02 inches below the normal. This moisture was fairly well distributed throughout the month as eleven separate rains. There was a light fall of hail on the 19th.

The table following shows monthly rainfall for 1895, the normal, and departure from normal:—

*Wind.*—The wind was from the south twenty-two times; southeast, eighteen times; southwest, eighteen times; east, thirteen times; north, eleven times; northeast, eight times; and northwest, three times. The total run of wind for the month was 9077 miles. This gives a mean daily velocity of 292.8 miles, and a mean hourly velocity of 12.2 miles. The highest daily velocity was 772 miles, on the 28th; the lowest, 124 miles, on the 24th. The highest hourly velocity was 39 miles, between 3 and 4 P. M. on the 27th. The following tables give comparisons with the preceding Mays:—

May.	Number of Rains.	Rain in inches.	Per cent of Cloudiness.	Prevailing Wind.	Mean Temperature.	Maximum Temperature.	Minimum Temperature.	Mean Barometer.	Maximum Barometer.	Minimum Barometer.
1858	12	5.12	...	...	59.95	91	39	...	...	...
1859	12	9.42	51	SW	65.61	88	42	...	...	...
1860	11	1.13	27	SW	69.10	97	30	...	...	...
1861	8	3.75	46	SW	64.46	90	42	...	...	...
1862	8	3.18	30	S	65.32	89	46	...	...	...
1863	4	3.13	25	S	68.80	91	48	...	...	...
1864	6	2.29	54	SW	64.80	89	35	...	...	...
1865	6	2.04	20	S	67.16	90	32	...	...	...
1866	7	2.83	49	SW	62.18	90	45	...	...	...
1867	9	3.59	44	N&NW	58.73	93	41	...	...	...
1868	3	1.38	31	S	66.08	88	50	...	...	...
1869	8	1.12	41	NW	59.11	88	43	28.72	29.05	28.39
1870	5	...	91	NW	67.63	93	49	28.73	29.00	28.40
1871	7	5.07	54	SE	65.05	88	45	...	...	...
1872	11	6.81	59	SW	58.99	90	30	...	...	...
1873	10	8.54	61	SW	61.34	86	44	...	...	...
1874	7	2.98	49	SW	68.88	93	40	28.77	29.01	28.11
1875	10	2.46	51	SW	64.15	98	29	28.71	29.04	28.10
1876	7	5.73	54	SW	63.84	86	34	28.71	29.02	28.20
1877	13	5.20	70	SW	64.16	84	31	28.66	28.90	28.24
1878	11	4.06	63	SW	62.02	85	34	28.66	29.04	28.24
1879	7	1.79	39	S	68.58	93	40	28.56	28.85	28.18
1880	6	3.74	40	S	70.40	94	44	28.56	28.88	28.28
1881	14	6.67	65	SE	68.25	87	46	28.58	28.84	28.22
1882	8	5.20	64	NW&S	58.35	86	36	28.59	28.88	28.10
1883	11	4.83	54	SW	60.74	90	37	28.57	28.94	28.06
1884	5	4.63	42	SW&SE	61.61	85	35	28.55	28.78	28.21
1885	8	4.30	34	NE NW	60.75	86	35	28.57	28.83	28.25
1886	9	4.87	26	E	69.61	100	42	28.85	29.20	28.38
1887	5	2.54	25	SW	68.53	99	37	28.85	29.20	28.19
1888	7	2.25	34	...	60.16	88	30	28.88	29.19	28.47
1889	7	6.15	38	...	63.11	94	30	29.01	29.32	28.53
1890	10	1.81	29	SW NW	62.86	92	30	28.79	29.14	28.36
1891	8	4.79	36	S	60.88	89	30	28.95	29.32	28.50
1892	12	6.62	51	NW	57.83	90	38	28.74	29.04	28.27
1893	9	5.73	35	S	60.85	91	31	28.76	29.01	28.25
1894	7	3.78	25	N	64.32	92	30	28.83	29.21	28.38
1895	11	3.02	34	S	66.70	101	33	28.76	29.15	28.29
Sums	311	153.47	1594	...	2431.4	...	...	689.36	...	...
Means	8	4.04	43	SW	63.99	...	...	28.72	...	...

## WIND RECORD.

May.	Total Miles.	Mean Daily.	Maximum Daily.	Minimum Daily.	Mean Hourly.	Maximum Hourly.
1889	9577	308.95	914	63	12.87	44
1890	6122	197.48	547	57	8.23	44
1891	7691	241.10	552	57	10.34	36
1892	10092	325.55	632	95	13.56	46
1893	9192	296.51	597	98	12.35	42
1894	8115	261.45	578	83	10.89	37
1895	9077	292.80	772	124	12.20	39
Sums	59866	1923.84	4592	577	80.44	288
Means	8552	260.55	656	82	11.50	41

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The *INDUSTRIALIST* may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

## MANHATTAN ADVERTISEMENTS.

## BOOKS AND STATIONERY.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Headquarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

LESLIE SMITH. College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

## DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in E. Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

## CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

KNOTSMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

## WATCHES, JEWELRY.

J. Q. A. SHELLEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

## DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

## HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

## DENTIST.

DR. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

## PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

## MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

## SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash, Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

## GENERAL MERCHANDISE.

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The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one, 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



# THE INDUSTRIALIST.

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### WINDMILL NOTES. II.

BY PROF. O. P. HOOD.

ONE catalogue of a prominent mill maker advertises the following table:—

The power of an 8 foot mill equals 2 to 2½ horse-power.

10 "	"	"	3 to 4 "	"	"
12 "	"	"	4 to 5 "	"	"
14 "	"	"	5 to 6 "	"	"

It is perfectly safe to say that the table is untrue. Such a table is apt to deceive. It would have to be divided by three or four to get nearly the actual power, even with a wind so high as to be unsafe for the stability of the mill. While there is a great variation in engineers' estimates of the power of windmills, yet these figures are beyond reason. The catalogue carries evidence of falsehood with it. A ten-foot mill is recommended for a six-inch and eight-inch pump in a well ten to forty feet deep. Assuming the largest pump (eight-inch), the longest stroke (ten-inch), and the deepest well with the quickest stroke quoted, the horse-power figures only about six-tenths or one-fifth of their tabular rating. It is doubtful whether the company would put in such a combination, for only in the high winds could the mill carry such a load. The same catalogue speaks of wells twenty to thirty feet deep, in which all the pipe is to be put below the cylinder.

If an absolutely perfect vacuum could be obtained, a pump could lift water about 32½ feet by suction at this elevation. In a thirty foot-well this would give a head of water to produce flow into the pump cylinder of two and a half feet. With many forms of pumps, at the fastest speed, this would not be sufficient to fill the cylinder at each stroke. But this theoretically perfect vacuum cannot be obtained within ten per cent by an ordinary pump. It is doubtful, therefore, whether a windmill pump will raise water by suction beyond 29 feet, and would fail to properly fill at a less depth. For the sake of rapid filling, the cylinder should be low.

A most interesting catalogue is that by John Irwin of the Stover Manufacturing Company, makers of the "Ideal" mill. It presents much of merit in an excellent manner. There are some things, however, that are stated with boldness and assurance that one is apt to question if specially interested in the subject. The table showing the work done by mills at different depths is presented with an appearance of accuracy not heretofore attempted. It is certainly most valuable—if true. The table gives the gallons raised per hour from twenty different depths of wells, the wind supposed to be blowing fifteen miles per hour. So far as I know, there is not enough well-authenticated data published to controvert the assertions of this table. It may be all right; but there are certain internal evidences in the table that make one doubt that it is a statement of actual experience, or that the principles on which it seems to be based will be upheld in practice.

The assertion is made that the power of this mill varies about as the fourth power of the diameter of the wheel. It has usually been considered to vary about as the square of the diameter. A sixteen-foot mill is supposed to have four times as much area of sails as an eight-foot mill, and to give about four times the power. This table states that under certain circumstances as to depth of well a sixteen-foot mill is sixteen times as powerful as an eight-foot mill. This discrepancy between four times and sixteen times is certainly important, and well illustrates the need of careful scientific work in this line. This table states that a sixteen-foot mill pumping from a fifty-foot well is only ten times as powerful as an eight-foot wheel, while pumping from a ten-foot well it is sixteen times as strong. If pump cylinders are properly proportioned to the depth, why should not a sixteen-foot mill give as much power from one depth of well as from another? As the depth varies, some variation in the power is unavoidable because the exact diameter of cylinder corresponding to the depth cannot easily be obtained. But why such large variations as are shown by this table are necessary is not apparent. For example, the table shows the power of a sixteen-foot wheel pumping from a fifteen-foot well to be 2.04 horse power, while from a fifty-foot well it is only 1.03 horse-power. Here is a variation of fifty per cent. The variation of the fourteen-foot wheel is thirty-eight per cent; of the twelve-foot, thirty-one per cent; and of the eight-foot and ten-foot mills, twenty per cent.

Whether the power stated can be obtained I think there are very few who actually know. The trouble with the whole windmill problem is the fact that so

little is positively known and so much unhesitatingly guessed at. With a few exceptions, all the horse-power values in this table lie between those given by A. R. Wolf, which are lower, and those lately published by Lieutenant Lewis in the *Engineering Magazine*. Lieutenant Lewis has been putting up electric light plants run by windmills, and his figures are supposed to be the result of careful measurement. The electrical apparatus used is much more efficient than any pumping device.

The power of a mill found in this way could not be realized in a pumping plant. I think it is to be doubted whether a sixteen-foot mill in a fifteen-mile wind will give two horse-power in pumping water.

Another item which contains truth, but not the whole truth, is found in the following quotation:—

It has been found that in central Kansas and central Nebraska, as well as of over large areas of the arid and semi-arid country, the average velocity of the wind is eleven miles per hour, which is probably equal to a working day of fourteen hours out of the twenty-four that the velocity will equal fifteen miles per hour.

Then follows a solution of a problem in which the wind is assumed to blow the equivalent of fifteen miles per hour fourteen hours a day for the five growing months. For the five months, including April and August, accompanying tables it is shown that the average for the five months is considerable better than fifteen miles per hour for fourteen hours a day, being seventeen hours instead. This average, however, is made up of such extremes, varying from thirty-one to seven hours, that the actual values for each month become more important than any average for a season.

The accompanying tables are based upon the wind records at this place for the past four years. Table I. (See page 159) shows the number of hours the wind blew at each velocity from May, 1891, to May, 1895.

Table II. shows the per cent of time in each month during which a mill was useless, the wind being below six miles or above thirty miles per hour. The small per cent of wind above thirty miles per hour is seen from Table I.

Table III. is computed assuming the usual statement to be true, that the power of a mill varies as the cube of the wind velocity, and also assuming a ten-foot mill to give one-tenth horse-power in a fifteen-mile wind. Table III. shows the power derived from the mill at each wind velocity during each month of the four years.

Table IV. shows the number of hours a day the wind would have to blow fifteen miles per hour in order to give the total horse-power shown in the same table; this horse-power being the monthly average for the four years taken from Table III.

It will be seen from Tables III. and IV. that during the critical months of June, July, and August, we have a rapidly diminishing power supply. Usually in August, instead of the wind blowing fifteen miles for fourteen hours a day, we have only seven hours a day, and in some years much less. In a year like last, we could have counted on such a wind in August for only 4.4 hours per day, the two months preceding also being below the average. In other words, when we want the wind the most, we have not nearly an average amount, and at times we are likely to have a continued lack of wind as well as of water.

The table shows that we could count on the equivalent of a wind velocity of fifteen miles per hour for eighteen hours per day for the year, but this figure should not be used in careful estimating without considering the probable power for those months when water is most needed to be pumped. For the average month of March, the wind would have had to blow fifteen miles per hour for more hours than were in the day to have equaled the total horse-power, showing that the wind-power equivalent for the whole time was something above fifteen miles per hour.

Some interesting problems are suggested by the tables. If the liability of a wind famine in the growing season is an important factor, should not mills be so made and loaded as to take full advantage of the low-velocity winds? In these months, nearly forty per cent of the available power is had from winds between six and fifteen miles. The recommendation of the "Ideal" people, that "the mill shall operate more than one pump as the force of the wind in creases," is important advice.

Table V. shows that of all the power available from a mill in July and August of 1894 over fifty per cent was from winds below fifteen miles per hour. In these months, there is very little power obtained from winds above twenty-four miles per hour.

In experimental work, where it is desired to find



TABLE II. Showing per cent of useless wind.

	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
1891	...	...	...	...	24.7	27.1	4.34	36.6	20.1	35.2	26.3	23.2
1892	3.61	23.3	20.1	24.4	2.26	19.5	33.0	46.7	30.6	34.9	23.2	21.7
1893	38.0	26.8	30.4	2.28	26.3	26.7	21.5	42.3	30.4	24.5	33.2	21.7
1894	21.4	26.5	25.7	21.3	26.6	24.9	36.0	39.7	30.2	25.4	21.5	...
1895	4.00	24.1	17.1	23.8	...	...	...	...	...	...	...	...
hence	33.1	24.2	23.5	23.1	23.0	25.8	33.5	41.4	27.5	31.2	28.4	27.3

VELOCITY OF WIND IN MILES PER HOUR												
10	11	12	13	14	15	16	17	18	19	20	21	22
1891	...	...	...	...	...	...	...	...	...	...	...	...
1892	...	...	...	...	...	...	...	...	...	...	...	...
1893	...	...	...	...	...	...	...	...	...	...	...	...
1894	...	...	...	...	...	...	...	...	...	...	...	...
1895	...	...	...	...	...	...	...	...	...	...	...	...
hence	...	...	...	...	...	...	...	...	...	...	...	...

facts that shall be of general application, conditions should be so arranged that there shall be but two variable quantities—one a cause, the other the resultant effect. If one starts out to experiment with hogs, and selects a lot of Poland Chinas, feeding them in closed pens, on straw and peas, and another lot of "razor-backs," feeding them corn chop and alfalfa in the field, if the second does better and makes more pork than the first lot, what farmer would take it as proof that the "razor-back" hog is the best all-round hog? Or, if the other lot turned out best, would it prove that straw and peas were better feed than corn and alfalfa? The general verdict would be that it proved nothing of general value except that hogs could be raised both ways. Wind mill experiments seem to be carried on in much this same style. A's wheel, with B's pump, at a certain depth of well and uncertain wind velocity, when compared with C's wheel and D's pump at a different depth and wind velocity, will neither prove A's wheel the best nor D's pump the worst. It proves nothing except that water can be raised both ways. The selection or improvement of the most efficient combination can only follow careful experimentation on each of the elements separately.

### "Well Enough."

The old injunction, "Let well enough alone," brings comfort to lazy people and to those who do not care to originate ideas. This saying is a foe to development, and an insurmountable obstacle to progress. It is like a stone wall beyond which a man, while he stands upon the ground, cannot see. There may be apples of gold in the orchard beyond; there may be diamonds in the sand over there; there may be music in the valley, and sunshine, such as he knows nothing of, on the mountain peaks; there may be limitless opportunity to do good beyond the wall.

But the shriveled berries are good enough for him, and the dull lead "will do" in the place of diamonds; his own husky voice is melody, and he himself is "the poor" to whom charity is first to be administered.

If the man who is willing to "let well enough alone" were to move his lazy bones and climb the wall, he would find beyond it those things which are so much better than the surroundings, and opportunities to which he had been accustomed would not appear "well enough" because not the best.

When the limit of accomplishment is reached, a man may say, "let well enough alone." Then "well enough" means his best. Having done all he can, one may rest in his assurance that God will take care of the result. — *Young Men's Era.*

TABLE IV. Showing the number of hours per day the wind would have to blow fifteen miles per hour to give the average monthly horsepower.

Month	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1891	11.4	17.9	31.8	26.5	2.28	16.1	10.5	7.2	15.0	14.9	18.6	16.1
1892	...	...	...	...	...	...	...	...	...	...	...	...
1893	...	...	...	...	...	...	...	...	...	...	...	...
1894	...	...	...	...	...	...	...	...	...	...	...	...
1895	...	...	...	...	...	...	...	...	...	...	...	...
hence	...	...	...	...	...	...	...	...	...	...	...	...

TABLE V.

PER CENT OF POWER DERIVED FROM WINDS BELOW 15 MILES PER HOUR	July	Aug.
1891	27.2	45.3
1892	32.7	33.1
1893	31.5	35.4
1894	40.2	68.1

### A Plea For Good Reading.

In our daily life we like to associate with those whom we think will have a good influence over us in some way. Perhaps a person has an unusually kind disposition; easy, graceful manners; is a fluent and entertaining talker; or, best of all, has a strong, Christian character, that sways us in the right direction. Any one of these things tends to draw us to our friends, and we, admiring their good traits, unconsciously try to imitate them. Many of the best people the world has ever known, lived and died before we were born. We were not able to profit by their personal example, but we have their thoughts and words handed down to us in their books; which we have the power to make of priceless value, if we read them with the spirit and understanding. The fact that the best books survive the ravages of time, is most strikingly shown in the life of our Bible through so many centuries. But if harmful books are not long-lived, we know there are many others equally injurious, continually coming into circulation to take the places of those cried down. Reading the noble thoughts, aspirations, and deeds of others cannot fail to awaken corresponding feelings in our own hearts; and our thoughts being to our actions as the seed to the flower, good thoughts and desires will produce good acts. We have all heard of a certain undesirable place that is "paved with good intentions;" but these same intentions surely have one virtue. We are more apt to respect and interpret charitably the motives of others, and in so doing we help to fulfill the commandment which bids us love our neighbor as ourselves. There is a literary value to be obtained from good reading, as well as moral value. People who have the faculty of saying things of great weight, usually have also the ability to clothe them in becoming language. It follows, therefore, that if we read only standard writers, our language and manner of expression will be improved, and our vocabulary broadened. It is too often the case that we country people, although we may have ideas well worth expressing, feel around so long for words to convey our meaning, that half its strength is lost. Especially is this the case when we rise to say a few words in public. Let us not be silenced by this fact, however, but stimulated to better efforts. If we cannot say what we wish, rest assured that careful reading will be one of our most efficient helps. The world has reached a stage when almost everyone reads—some for profit, but more for pleasure; and it is a sad fact that many think the place to find pleasure is in the sensational literature of the day, losing sight of the fact that the only true pleasure is that from which we derive some real benefit.

This craze for novels and papers of doubtful reputation makes it a most important duty for the farmer and his wife to train boys and girls to love good reading. Now, do not make the children read books so solid and deep that they cannot understand, much less find interesting. Do not give them Lord Bacon's essays, nor Drummond's "Natural Law" at first, but feed their minds on a food suitable for their tender years, and as they grow older, influence them by both precept and example to choose literary works that will tend to form solid characters, characters suitable for every day life and work, that will help them to put honesty, truth, and neighborly kindness before pleasure or greed of gain, and that will make their homes the most desirable of all places in which to be. Rather a sweeping list of virtues to possess in full measure, but good books will surely help to plant them all. Newspapers are not to be condemned; indeed, we could hardly do without them now, but they should be taken like spice, in moderation. Select the ones you consider the best, regardless of cost, those which have the highest moral tone and stick most closely to the truth. Let the farmer read his agricultural papers and books and profit by them all he can; but do not read one class to the exclusion of all others; rather inform yourself in various ways on other topics beside the one in which you are most interested. One of the standard cyclopedias, if used intelligently, is a great educator. Have one of them, and learn to consult it on any subject you may chance to touch in conversation. Teach the children to have opinions of their own, and either prove or set them right by the use of the cyclopedias; never let them think it is too much trouble to hunt the place, or to take time for reading a few pages. We know that facts we gather by such methods of conversation and investigation stay by us better than when gained in any other way, and a higher degree of intelligence than we now possess will not only make us better tillers of the soil, but more useful citizens. — *Practical Farmer.*

We often meet the question, "Why do the boys leave the farm?" Soon this will be changed to: "Why does the old man move to town?" if the present exodus from the country to the towns continues. When the conditions are just right, the boys, as a rule, do not wish to leave the farm. I do not feel capable of giving the right kind of advice for keeping boys on the farm, nor of setting forth the causes which create the desire to leave it. But among them I believe that too long hours, incessant and too hard labor, isolation, and the lack of mental and physical recreation are some of the things which lead the boys to drift cityward. It is a good idea to teach the boys all kinds of farm work, and give them a day off occasionally, and to provide plenty of recreation of a character consistent with good culture, good morals, and good farming. The old man should not do all the going to town. Let the boys go occasionally, and entrust them with some piece of business to do. — *Live-Stock Indicator.*

TABLE III. Showing the probable power derived from a 10-foot mill at each wind velocity in each month from May, 1891 to May, 1895.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th, Commencement.

1895-96.

Fall Term—September 12th to December 20th.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address C. E. Goodyear, Loan Commissioner, Oatville, Kan.

## GENERAL LOCAL NOTES.

The Sewing Department will make its exhibit on Tuesday. See it.

Miss Harper attended commencement exercises last week at Bethany College, Lindsborg, where she used to teach.

Rev. J. Madison Allen, of Bridgewater, Mass., visited College on Thursday in company of Mr. Wm. Allen, of Manhattan.

Prof. Arnold Emch of the State University, who was assistant teacher in graphics of this College last year, came up from Lawrence on Friday, intending to stay during Commencement. Prof. Emch received the degree of Doctor of Philosophy of the State University last week—the first ever given by any Kansas institution. He is re-engaged by the University, and made Assistant Professor of Graphics.

The Riley County Educator for June has this in announcement of the Normal Institute: "O. E. Olin, Professor of Language and Literature at the Kansas State Agricultural College, is so well known to teachers and others, not only in Riley County, but throughout the State, that words of introduction are unnecessary and out of place. He is a host in himself, and his presence alone would add much to the value and inspiration of the institute."

## GRADUATES AND FORMER STUDENTS.

H. W. Jones, '88, made a short call on Monday. He is re-elected Principal of the Alma schools.

Delpha Hoop and Myrtle Harrington, '90, Elsie Crump, Fourth-year, and Mary Wilkin, Third-year, will be new teachers in the Manhattan Schools next year.

S. S. Cobb, '89, and Carrie Hunter-Cobb, student

two upwards, and filled the air with sounds of merry voices as they talked and joked together. Once in a while a hammock, burdened heavier than its strength warranted, would deposit its burden on the ground, when there would be a few screams from the girls and a general laugh all around, and the hammock would be fixed up and would be filled again with from two to six, according to size.

The members of the Class were agreeably surprised to find that Miss Harper and Miss Rupp were invited. They are members of the Class of '96, having entered at the same time and undergone the trials and tribulations of a first-year with the boys and girls of the Class.

The Cadet Band furnished good music during the evening, and ice cream and cake were served on the lawn. Late in the evening the party went their ways toward home, leaving thanks with their hostess for a pleasant time.

D. C.

## Festive Fourth-years.

There is probably not a Senior of '95 but will remember till he is old and gray the picture that presented itself in the kitchen laboratory on Wednesday last. The occasion was the banquet given by Prof. White, assisted by Mrs. Kedzie, in honor of the last

meeting of the Fourth-year Rhetorical Class. The good-looking crowd, the flashes of wit and repartee that went oscillating about the apartment, were characteristic of the merry class, as was also the rapid disappearance of delicious viands prepared and served by the ever-hospitable Mrs. Kedzie and her special cooking girls.

W. H. Phipps, as Toastmaster, officiated with his usual tact and naturalness, and introduced R. J. Barnett as the first after-dinner speaker. "Our Friends in Books" were ably discussed by our well-read classmate. Ada Rice next showed familiarity with the Library in her talk, and closed with an invitation to visit this home of books. The itinerant E. P. Smith was at home in speaking of "The Wide, Wide World;" and the class seer, Geo. C. Wheeler, portrayed vividly "The College Fifty Years Hence." Commencement Day is a week hence, and Professors as well as graduates "abstract." Laura McKeen was specially fitted to recall the happy days now past and to anticipate our bright future.

Toastmaster Phipps here expressed our heartfelt regrets upon parting with friends who stay,—friends who have helped us and friends who have worked with us. Speaking for both of these, Smith Norton responded appropriately, bringing to the Class tender feelings for those who remain behind.

Pres. Fairchild spoke next to the Class, expressing real disappointment that the usual pleasure of entertaining the Seniors at his home must be foregone. Although for four years the Class has anticipated this happy event, they resign their wishes with the earnest hope that our President's happy home, with health and strength regained to all its inmates, will be a reality in the near future.

The toast to Mrs. Kedzie was given by George Fryhofer.

George is perfectly at home in saying pleasant things, especially to the ladies; and with so worthy a subject, was in his element. He voiced the sentiment of the Class in wishing our friend the best possible enjoyment of her trip to Europe this summer, which trip she takes in company of Pres. and Mrs. Fairchild. Mrs. Kedzie, as usual, evinced in her response her capability for saying just the right thing in the right place.

Florence Corbett, with characteristic brightness, toasted our rhetorical professor. Professor White, in response, returned the compliment,—which might mean otherwise, pointed by some well-selected jokes, then expressed his real regard and friendly attachment for the Class of '95. Charles Selby discussed the inspiring topic, "The Ladies of the Fourth-year Class," and exhibited symptoms of having lain awake nights in preparing to do this occasion justice. "The Boys of '95" should feel proud of the eulogy they received in the toast by Olive Wilson, who in her graceful way expressed the utmost confidence in her subject.

John Patten intimated in his toast, "The Class of '95," that "all is not gold that glitters," and despite the previous complimentary statements, insisted that this Class could "smile and smile, and be a villain all

TABLE I. Showing the number of hours each month the wind blew at each velocity from May, 1891, to May, 1895.

	1891												1892												1893												1894												1895											
	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APRIL																								
0	38	16	40	25	16	23	27	16	25	2	17	13	15	6	34	72	41	8	11	28	51	27	52	21	4	3	4	6	4	10	3	1	1	1	3	2	4	9	11	4	7	2	13	11	6	3														
1	30	24	45	27	12	23	24	14	44	16	21	16	14	10	50	67	31	27	31	44	36	23	38	17	20	17	10	22	30	19	39	16	14	14	8	9	15	8	34	31	8	22	16	19	40	18	16	6												
2	30	35	57	44	14	46	25	14	51	20	17	13	17	20	46	57	32	47	32	59	47	35	27	27	40	35	21	50	39	29	40	31	24	25	17	14	33	36	51	58	34	34	32	20	67	29	25	28												
3	27	45	55	60	23	57	22	25	51	27	24	22	24	36	41	42	37	55	34	61	39	33	24	16	39	34	29	75	45	43	32	41	39	30	24	16	48	47	75	49	55	42	34	64	29	20	42													
4	30	33	76	63	39	53	47	36	52	46	11	23	36	32	39	63	36	51	44	59	46	20	21	19	40	38	21	79	34	36	53	41	39	52	34	34	49	70	70	62	52	55	36	36	64	40	21	35												
5	22	37	49	56	40	61	37	33	47	51	27	22	35	32	44	47	43	69	44	47	55	32	23	19	32	61	38	83	51	16	51	39	37	22	36	30	41	50	62	61	51	44	45	40	50	49	31	41												
6	36	53	63	63	53	63	46	30	58	49	27	26	25	35	35	55	39	73	42	58	31	29	23	29	38	55	42	65	63	39	47	40	40	30	26	25	16	39	55	71	48	48	45	46	56	46	35	36												
7	44	35	45	57	34	45	38	31	45	43	27	46	37	47	33	40	46	55	42	56	39	34	38	28	34	58	42	55	38	32	40	50	53	50	30	22	55	49	54	65	44	33	53	43	64	52	37													
8	40	44	55	54	34	37	37	26	40	46	35	31	41	24	29	42	46	49	43	49	40	26	24	40	43	45	35	50	30	37	55	54	47	41	34	25	48	61	51	61	58	48	33	51	26	64	55	34												
9	44	46	44	56	48	42	44	40	19	39	24	22	31	36	48	37	38	50	37	50	45	27	25	41	30	67	45	41	47	31	40	45	68	33	48	34	46	43	52	55	58	49	44	52	35	40	55	45												
10	41	39	38	40	44	36	36	34	45	21	26	39	44	47	41	34	25	44	38	38	29	20	49	35	46	47	50	38	31	29	45	51	37	24	22	36	44	41	56	53	32	42	38	28	45	38	50													
11	47	33	24	50	46	30	24	41	30	53	33	33	35	35	49	32	37	21	22	27	34	39	23	25	28	45	30	26	46	35	34	28	41	44	28	26	47	35	40	37	41	31	37	44	27	28	34	49												
12	44	42	30	37	42	24	33	38	27	37	41	37	45	39	36	26	33	23	29	29	41	28	30	35	39	35	45	26	36	46	38	40	45	26	30	24	31	26	31	23	24	40	40	32	26	32	53													
13	34	32	19	27	42	24	32	30	34	31	35	29	25	50	36	15	34	16	27	19	24	21	15	23	34	26	20	25	37	35	27	45	42	31	24	27	16	22	39	26	23	26	35	27	33	28	29	24												
14	42	42	14	15	32	19	28	22	35	39	26	32	31	36	27	23	28	16	24	24	35	29	15	28	40	23	31	14	33	30	16	41	36	37	33	24	25	26	26	16	28	24	42	33	24	19	17	29												
15	35	30	13	17	37	18	36	25	31	31	26	31	25	42	37	15	26	17	25	17	22	22	21	16	36	24	22	13	22	31	12	30	27	27	34	23	21	29	11	11	18	26	26	23	26	13	31	26												
16	37	35	14	16	26	21	27	24	16	30	24	14	24	19	30	15	16	11	27	10	27	24	20	34	25	28	18	10	21	21	22	36	29	33	22	24	15	22	17	10	25	26	34	27	16	15	30	27												
17	23	19	12	7	24	21	24	21	18	30	27	26	19	19	24	9	14	18	22	12	16	21	22	14	15	13	17	11	14	36	16	23	30	20	27	36	25	27	15	8	17	21	22	20	15	26	24													
18	20	19	10	9	17	11	15	22	12	26	27	28	22	24	14	13	11	15	22	11	16	17	26	38	16	14	14	12	10	18	15	23	17	15	17	24	22	22	11	3	21	19	10	17	16	13	33	28												
19	15	11	6	7	16	10	17	19	15	6	35	18	26	12	12	3	14	11	14	10	11	20	18	14	12	8	9	9	11	24	16	14	11	12	15	23	19	23	6	2	8	16	18	24	14	19	23	13												
20	14	15	4	1	11	11	13	24	11	11	20	18	21	15	12	7	20	15	13	5	16	26	22	25	14	10	9	7	7	27	12	17	13	16	17	23	17	15	3	1	13	20	15	11	17	16	23	16												
21	2	4	9	2	17	16	10	24	8	4	20	13	16	14	5	4	15	13	2	20	27	24	14	13	5	5	2	6	23	11	15	6	8	8	27	12	5	4	7	13	7	12	8	6	15	6														
22	3	5	3	19	10	11	14	9	1	17	21	22	18	3	7	12	11	16	2	4	18	14	14	6	7	5	2	3	14	6	5	5	23	13	10	6	6	1	6	10	10	6	4	3	19	8														
23	3	2	3	4	8	11	7	25	7	2	10	11	13	8	2	5	6	14	9	3	4	15	21	13	16	6	8	2	3	5	14	5	5	7	14	27	10	9	4	3	8	10	13	5	2	15	8													
24	5	2	5	7	9	10	11	2	2	22	16	13	16	1	1	6	4	9	2	2	12	23	18	16	3	1	3	4	10	8	3	4	6	12	21	4	2	1	5	14	3	15	5	6	8															
25	4	3	1	3	6	4	14	5	1	14	17	17	10	1	2	7	5	6	2	2	8	22	9	16	3	3	1	3	6	4	3	1	3	6	4	3	1	3	20	6	3	3	4	6	4	12	3	13	15	10										
26	8	4	3	2	4	4	5	11	3	1	12	7	12	6	3	9	6	4	2	2	4	17	14	12	1	1	1	3	7	5	2	3	2	16	15	8	2	2	7	4	2	1	4	9	4															
27	2	2	4	2	2	6	15	1	14	22	14	8	2	1	3	2	9	2	1	1	6	15	6	7	1	2	2	7	4	2	3	2	5	9	8	1	1	5	2	7	5	1	8	1	8	1														
28	2	1	1	2	5	3	3	3	3	7	9	9	5	2	1	7	2	1	7	2	3	8	9	8	1	1	4	8	3	2	2	16	17	3	2	1	3	4	3	3	4	3	6	6	5															
29	1	2	1	3	3	5	1	10	6	9	7	2	1	4	2	1	4	5	11	7	11	1	1	1	1	1	1	5	1	1	2	13	12	9	3	3	1	3	1	3	2	3	4	2																
30	4	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
31	4	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
32	4	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
33	1	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
34	1	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
35	1	1	3	9	3	9	2	11	5	3	6	1	1	1	10	7	4	2	1	4	3	1	1	3	1	1	3	1	1	3	14	9	3	2	2	13	6	2	2	2	3	3	2	3	2															
36	2	2	4	2	2	6	15	1	14	22	14	8	2	1	3	2	9	2	1	1	6	15	6	7	1	2	2	7	4	2	3	2	5	9	8	1	1	5	2	7	5	1	8	1																
37	2	1	1	2	5	3	3	3	7	9	9	5	2	1	7	2	3	8	9	8	1	1	4	8	3	2	2	16	17	3	2	1	3	4																										



the while." As class-book biography collector, he knew whereof he spoke.

The interesting program was closed by the Senior Quartet, made up of Patten, Joss, Fryhofer, and E. P. Smith, who sang, "We're through Rhetorical-ing," and there was not one who left the banqueting hall but felt the most sincere regret that we were indeed "through rhetorical-ing," and that the pleasant year's work was at an end.

#### COLLEGE ORGANIZATIONS.

May 31st.

The program of the Ionia Society was opened by a discussion, "Which is the most essential to an old maid's happiness, her tea or her cat?" Harriet Vandivert presented the claims of the cat, and Clara Newell those of the tea. Next we were favored with a vocal solo by Rena Helder, accompanied by Hilda and Ida Walters with guitars. The Society showed its appreciation of the music by a hearty encore, to which they responded. The Oracle this week was an exceptionally bright one, showing that the editor, Miriam Swingle, and her staff are girls possessing marked ability in writing interesting articles. A vocal solo by Geo. W. Smith was much enjoyed by all the Society, Olive Wilson accompanying on the piano. The program was closed by an instrumental duet on the guitar and mandolin, by Hilda and Ida Walters. On being heartily applauded, they favored the Society with another selection.

W. A. H.

June 1st.

The Hamilton Society was called to order promptly at eight o'clock. After prayer and reading of minutes, M. W. Sanderson opened the program with a select reading. W. Poole followed with a well written essay entitled "Decoration Day at the K. S. A. C." After W. G. Cooper presented the news of the week, we listened to an instrumental trio by C. S. Marty, Frank Smith, and John Poole. The debate was next taken up on the question, "Resolved, that less weight should be paid to precedent in judicial decisions." The affirmative was ably argued by C. F. Doane and S. Adams, and the negative by A. P. Carnahan and W. Anderson. The Society decided in favor of the negative. J. W. Adams discussed "The American road tax system," severely criticising the present method of working out road tax. C. S. Marty presented a good edition of the Recorder. Some of the selections were as follows: "New Discoveries in Mars," "Obituary," "Cheese and Soy Beans in Mars," "A True Story," "Start Right," "Characteristics and future Prospects of our Fourth-year Hamiltons," "Tribute to the strawberry patch." This finished the program, and after the usual business, the Society adjourned.

J. W. H.

#### The College Catalogue.

The Thirty-second Annual Catalogue of the Kansas State Agricultural College shows many things of interest to all friends of education. The handsome illustrations show the prominent features of grounds and buildings, and the letter press gives information concerning the thoroughly practical course of study, the industrial training, expenses, and the facilities which have helped to place this institution at the head of its class in the world.

During the year just closing there were enrolled 572 students, of whom 361 were gentlemen and 211 ladies. These students represented 66 counties of Kansas and 14 other States. The graduating class numbers 36 gentlemen and 21 ladies.

During the 32 years of its existence, the College has received more than 5,000 students, about a third of whom were young women. About seventy-five per cent. of these have come from farmers' homes, and after from three months to three years of study, have gone back to such homes without graduation. The number of graduates up to 1895 is 397, of whom 136 are women.

Something of the growth of the institution is shown by the following record of attendance:—

COLLEGE YEAR.	Sp. chd.	First year.	Second year.	Third year.	Fourth year.	Post-graduate.	Total.	Graduated.
1878-'79		90	89	16	12	...	207	9
1879-'80		167	61	35	11	2	276	8
1880-'81		184	48	24	9	2	267	8
1881-'82		232	50	19	11	...	312	12
1882-'83		245	60	30	12	...	347	19
1883-'84		257	92	26	18	2	395	17
1884-'85		274	71	36	16	5	402	14
1885-'86		274	91	35	24	4	428	21
1886-'87		312	96	44	24	7	485	21
1887-'88		305	92	46	27	2	472	22
1888-'89		266	103	41	28	7	445	25
1889-'90		307	105	63	28	11	514	27
1890-'91		343	135	50	53	12	593	52
1891-'92		336	139	62	37	10	584	35
1892-'93		339	110	66	43	29	587	39
1893-'94		275	141	72	42	25	555	40
1894-'95	5	276	108	89	64	30	572	40

\*Course strengthened.

†Requirement for admission raised.

#### COURSE OF STUDY

Is most practical and thorough. Beginning with algebra, English analysis, and geometrical drawing, it provides accurate training in those studies which are most needed in every day life, and is strongest in those sciences which are especially related to agriculture and the mechanic arts.

A year's work in English broadens the foundation for that future character building which is possible only to him who has a working knowledge, at least, of his mother tongue.

Mathematical study is carried through three years, giving a term to trigonometry and surveying, to mechanics, and to civil engineering.

The work in chemistry, botany, physics, entomology, zoölogy, and veterinary science, conducted in

laboratories especially designed and fitted for their several purposes, serves to develop those habits of inquiry into, and thought upon, the laws of nature, upon a knowledge of which so much of success in life depends, and, at the same time, to supply facts for use in future study or in application to the arts of practical life.

Even so short a time as one term spent in study here brings direct results in mental discipline and increased practical knowledge.

The required course is four years, but by special arrangement the time may be extended with the privilege of elective study in advanced chemistry, botany, zoölogy, engineering, mathematics, economics, entomology, drawing, agriculture, horticulture, veterinary science.

The short course in agriculture, a series of lectures by members of the Faculty and specialists on subjects immediately connected with agriculture, horticulture, and the related sciences, is given during the first two weeks in February, to which all have free access.

#### INDUSTRIAL ARTS.

In agriculture, horticulture, wood and iron-work, and household economy, the application of scientific truths learned in the class-room is made to the end that the hands may become the skilled and ready instruments of thoughtful minds; that the student may preserve habits of industry and mental exertion, and remain in hearty sympathy with the work by which our people thrive. Every encouragement is given to habits of daily manual labor during the entire term. All such labor which is not a part of the training, and which is of value to the College, is paid for at rates varying with the service rendered, from eight to ten cents an hour.

#### MILITARY DRILL.

All young men of the First and Second-year classes take military drill under the direction of a U. S. army officer detailed for the purpose. Uniforms for use in drill exercises are furnished by the College, and the necessary arms by the Government.

#### HEALTH AND CHARACTER.

This careful blending of physical and mental exercise, together with the fact that the students are not compelled to congregate in large numbers in dormitories, has given this institution a remarkable health record; while the general character of the students for good morals and good deportment cannot be excelled anywhere.

#### THE LIBRARY AND APPARATUS.

All students have the freest possible access to a carefully selected scientific and general library of some 16,000 volumes, and apparatus, worth one hundred thousand dollars, is provided for use in the various scientific departments, while the work of the Agricultural Experiment Station is at all times open for their inspection, thus affording them the greatest facilities for verifying the facts and adding to the knowledge gained elsewhere by means which must help to make of them independent thinkers.

#### ADMISSION, STUDIES, ETC.

Students are admitted to this College, on examination, direct from the district schools of the State. Diplomas received on the completion of an approved county course of study, certificates of passing the grammar grades in selected city schools, and Kansas teachers' certificates are accepted in lieu of the entrance examination.

#### TUITION FREE.

Endowed by the Nation and maintained by the State, this College opens its doors to all classes without charge for tuition and under conditions which make the necessary expenses for the student very light.

#### STUDENTS' SOCIETIES.

Prosperous literary, scientific, and religious societies are maintained by the students.

#### OTHER INFORMATION.

The fall term begins on September 9th next with examinations for admission. Copies of the catalogue and other points of information may be obtained by addressing the President or the Secretary, Manhattan, Kansas.

#### Praise—Don't Blame.

Why is it that even with the nearest and dearest praise is so begrudged, while blame is always so freely bestowed? In nine cases out of ten the former does infinitely more good and incites to far greater exertion than the latter. Nevertheless, as a rule, the fondest parent, the kindest teacher, the most faithful friend, often hesitates to praise, while seldom failing to censure when the occasion calls for it. There is even the feeling latent that the recipient will be unduly related by approbation bestowed; and parents and teachers sometimes hesitate on that account to express unstinted commendation, while brothers and sisters, grudge the satisfaction and, perhaps, self-complacency they might make by giving expression to the admiration they may honestly feel. While flattery is ever profuse and easy to obtain, honest praise is a rare commodity, seldom given even when most deserved, and grudgingly withheld when most needed. How often a child feels "there is no use trying" simply because his feeble efforts for the right obtain no recognition, while his faults are constantly recapitulated; how often the weak endeavors of a selfish nature to "give up" pass unnoticed, while the original sin is constantly commented upon! Many a puny plant has died for the want of kindly nourishment might have grown strong and vigorous under favorable conditions, and it is sad to think that in many a household where children are apparently brought up under the best auspices the germs of better things constantly wither away for the lack of the sunshine of loving praise and commendation.

#### College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.,—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

#### MANHATTAN ADVERTISEMENTS.

##### BOOKS AND STATIONERY.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

LESLIE SMITH. College and School Books and Stationery. Note-books, tablets, inks, pens, pencils, drawing instruments, etc. Also a full line of reliable boots, shoes, slippers, and rubbers. Prices are low.

##### DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

##### CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

KNOTSMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

##### WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewelry and Gold Spectacles, also Musical Instruments.

##### DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

##### HARDWARE.

A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

##### DENTIST.

D. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

##### PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

##### MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

##### SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrop's Barber Shop, Next door to Postoffice.

##### GENERAL MERCHANDISE.

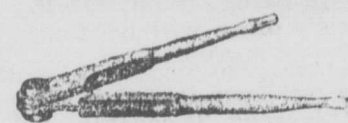
THE SPOT CASH STORE is Head-quarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, School Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

##### PHYSICIANS.

INFIRMARY for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. SOLON D. ROSS, M. D., 523, 525, 527 P'tz Av.

#### A NEW BLACKBOARD COMPASS.



The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved knurled joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to use. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



# THE INDUSTRIALIST.

VOLUME XX.

MANHATTAN, KANSAS, SATURDAY, JUNE 15, 1895.

NUMBER 40.

## The Class of '95.

### The "Jumbo" Class of Fifty-seven Members--Their Portraits and Auto-graphs--The Class Day Program and Class Song.

#### Class Day.

The Class Day exercises, held Tuesday evening, were attended only by invited guests, who were present in sufficient numbers to pleasantly fill the chapel. The program was well prepared, as is shown in the reproduction of it on this page.

The Class Orator, F. E. Rader, presented in a masterly manner the two sides of the question, "The use and abuse of knowledge." The use of knowledge is generally understood. The abuse of knowledge by unscrupulous persons is to be deplored.

Marrietta Smith, Class Narrator, gave something of the history of the Class.

C. B. Selby gave an original cornet solo, "Mabelle," named, presumably, in honor of his sister and dedicated to the ladies of the class.

C. D. Adams, as Prognosticator, saw the Class in 1910 in various incongruous and undreamed of situations. The members of the Class unhesitatingly pronounced "C. D." a prophet beside whom Mr. Hicks is a shining success.

G. W. Fryhofer, Versificator, told as well as anybody not a poet born could tell in rhyme, what the class had done, what it had left undone, and what it hoped to do.

E. H. Freeman, Undertaker, accompanied by four student pallbearers, marched solemnly to the

#### CLASS DAY PROGRAM

June 11, 1895

Overture, Honeymoon March	Class Orchestra
Orator	F. E. Rader
The Use and Abuse of Knowledge	
Male Quartette	When in Blossom Time We Meet
F. E. Rader	J. V. Patten
W. I. Joss	F. J. Smith
Narrator	Marietta Smith
Cornet Solo, "Mabelle"	C. B. Selby
(Dedicated to the Ladies of '95)	
Prognosticator	C. D. Adams
Vocal Duet	Stars of the Summer Night
Mabelle Selby	John Patten
Versificator	G. W. Fryhofer
Instrumental Music	The Colored Man's Dream
	Mandolins and Guitars
Undertaker	E. H. Freeman
The Song of 'Ninety-five	
Words by T. W. Morse	Music by Olive Wilson
Valedictorian	Hortensia Harman

front of the stage, and pronounced the burial service over the lamented spade of '92, which reposed beside him in its coffin. Two trustworthy members of the Class accompanied the dear departed to its last resting place in the Blue River, and over the watery grave pledged each other to secrecy as to the exact spot of interment.

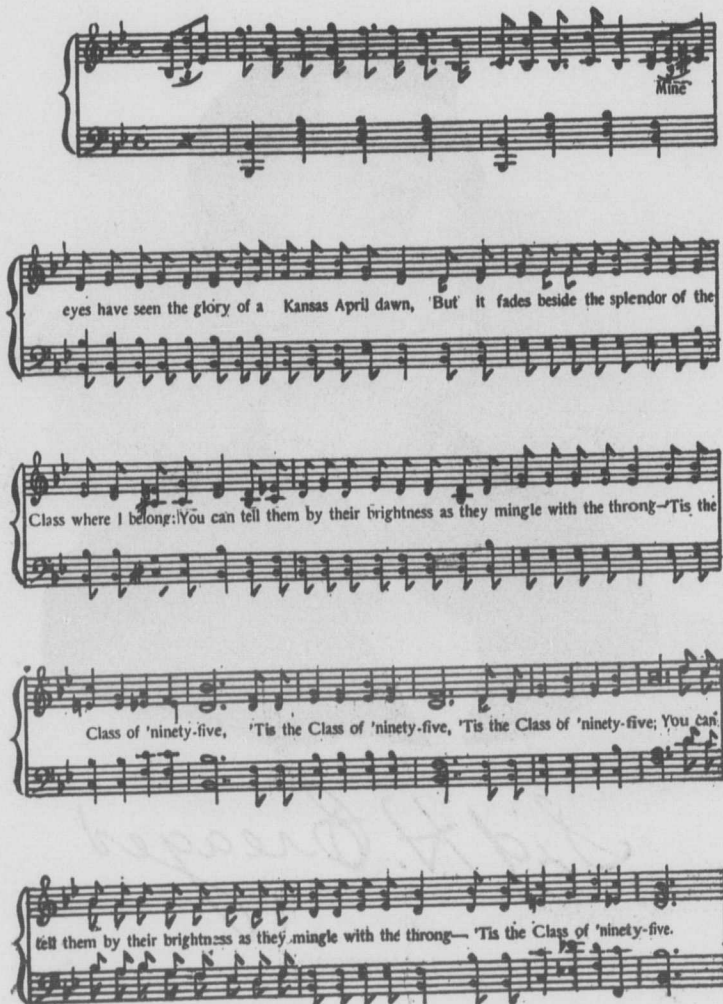
Hortensia Harman, Valedictorian, presented an excellent farewell address. In earnest, even tender words, she urged her classmates to put their hearts into their work, whatever it may be. "We have spent four busy, happy years together—years to which memory will cling like the ivy to the gray walls that have become so familiar and dear to us. In all human probability we shall never assemble together again after leaving these halls tomorrow; but whatever may await us in the future, beyond whose mystical curtains we discern nothing, we know that our College that we love, our friends, whose work is here, and who have proven friends, indeed, and the Class of '95 will inspire us ever to the higher things of life. And when the final farewell comes, these memories will be viewed in retrospect as stepping stones to the goal of strong manhood, true womanhood, attained."

"And while the evening twilight fades away,  
The sky is filled with stars invisible by day."

#### The Song of 'Ninety-five.

Words, T. W. MORSE.

Music, OLIVE WILSON.



#### The Song of 'Ninety-five.

- In numbers, 'tis the greatest ever graduated here:  
For beauty of its maidens, it stands without a peer;  
And for prospective weddings there is nothing that comes near  
The Class of 'ninety-five,  
The Class of 'ninety-five,  
The Class of 'ninety-five;  
And for prospective weddings there is nothing that comes near  
The Class of 'ninety-five.
3. There are some among its members, it thrills us to relate,  
Who might now be professors or officers of state;  
But they've foregone these honors for a chance to graduate  
With the Class of 'ninety-five,  
With the Class of 'ninety-five,  
With the Class of 'ninety-five;  
But they've foregone these honors for a chance to graduate  
With the Class of 'ninety-five.
4. In chapel, each division of this illustrious lot  
Have marched upon the platform and in the chairs have "sot;"  
Their hearers they enraptured and their pieces they forgot—  
This Class of 'ninety-five,  
This Class of 'ninety-five,  
This Class of 'ninety-five;  
Their hearers they enraptured and their pieces they forgot—  
This Class of 'ninety-five.
5. But when upon the morrow you cringe before the blast  
Of five-hundred-word orations as they tumble thick and fast,  
You will thank your solar system that you have seen the last  
Of the Class of 'ninety-five,  
Of the Class of 'ninety-five,  
Of the Class of 'ninety-five;  
You will thank your solar system that you have seen the last  
Of the Class of 'ninety-five.
6. To be foolish for the moment is the wisest thing to do;  
We know that with the morning our work begins anew;  
And behind this talk and nonsense beat warm hearts forever  
true  
To the Class of 'ninety-five,  
To the Class of 'ninety-five,  
To the Class of 'ninety-five;  
And behind this talk and nonsense beat warm hearts forever  
true  
To the Class of 'ninety-five.

#### Fragments from the Class Poem.

At last the longed for hour has come,  
Impatient, yet too soon for some.

How odd the morning we assembled:  
The sky o'er head somewhat resembled  
Fashion's freak, a maiden's name,  
For though it might remain the same  
'Twas apt to change, and in the spree,  
No telling what the change might be.  
And, while uncertain of the weather,  
More doubtful still as now together,  
The group moves on. The sun, advancing  
Every blade of life enhancing,  
Dispels the clouds. The work of day  
Is now at hand; no time for play.  
Thus closes this first college day,  
"Vacation's coming," First-years say.

Back again, to work, from play,  
The morning of another day  
Finds happy faces, ready hands,  
Feet familiar with the sands,  
We're Sophomores—true second-years,  
Tormented not by Freshman fears.  
Sophomore—the root would be,  
Sophos, wise—more wise you see,  
How'er, translate it as you will,  
This derivation fills the bill.  
More wise because of acids nameless,  
More wise because of "Ag. Chem." fameless,  
More wise because of insects tameless,  
More skilled in planting orchards right,  
More learned to run the plow aright,  
More apt to rest when out of sight.  
Sophomore—we'll all agree,  
Sophos—wise, more wise to be.

The Junior though, is really busy;  
No wonder that his head gets dizzy.  
This is the year of friendships true  
And numbers lost. The favorite few  
Are thrown together, and class ties stay  
Are drawn and fixed in junior days.

But now our college days are o'er,  
We'll answer here in class no more;  
Farewell, farewell, to K. A. C.,  
We owe a mighty debt to thee,  
We'll not forget thy vine-clad towers,  
Thy flowery nooks, and shady bowers;  
Thy evergreens will cheer us still,  
When all without is winter's chill.  
Sad hour of parting, and yet farewell,  
Farewell, farewell, farewell.





*Florence R. Corbitt.*

MANHATTAN.



*Daisy Day.*

MANHATTAN



*Elsie Crump.*

MANHATTAN.



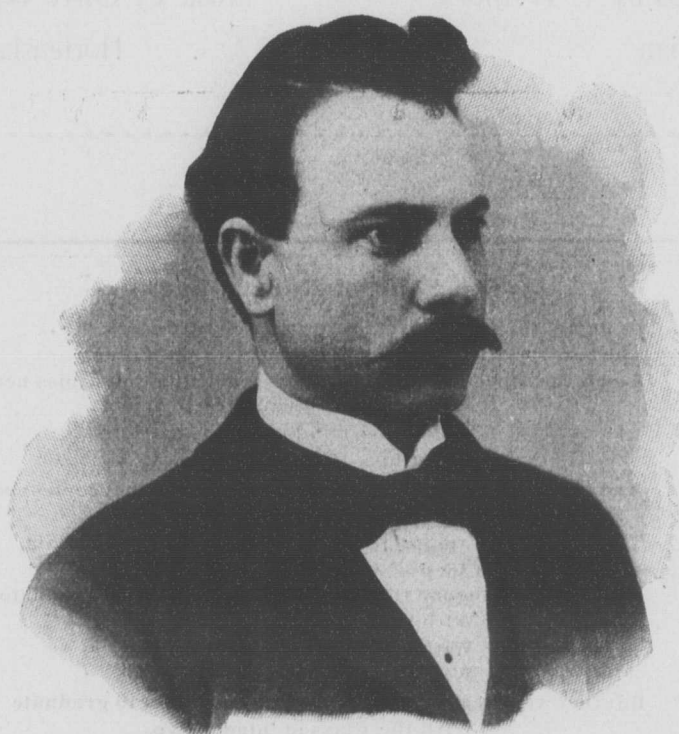
*J. Bell*

SCOTTSVILLE.



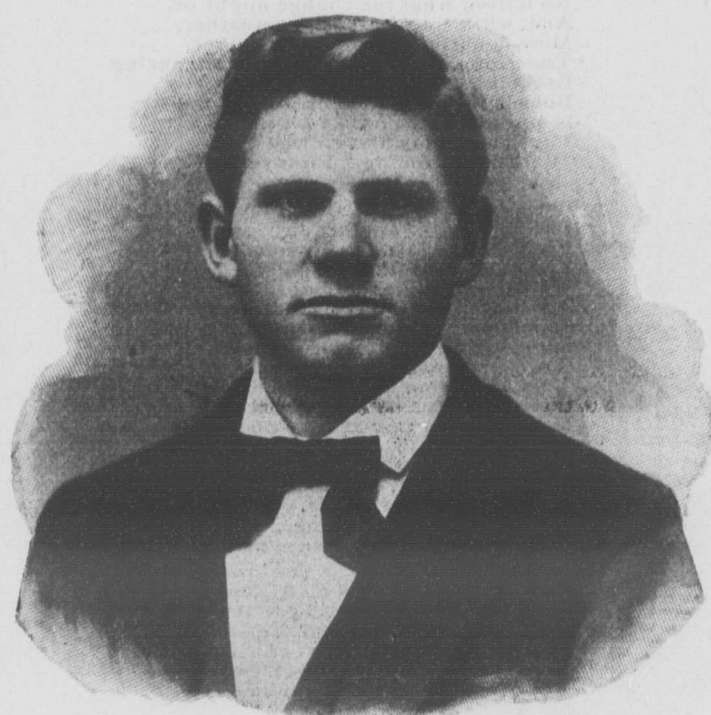
*R. J. Banett.*

DENISON.



*C. D. Adams*

OSAWKIE.



*B. W. Conrad.*

CAPOMA.



*Sid H. Creager*

JAMESTOWN.





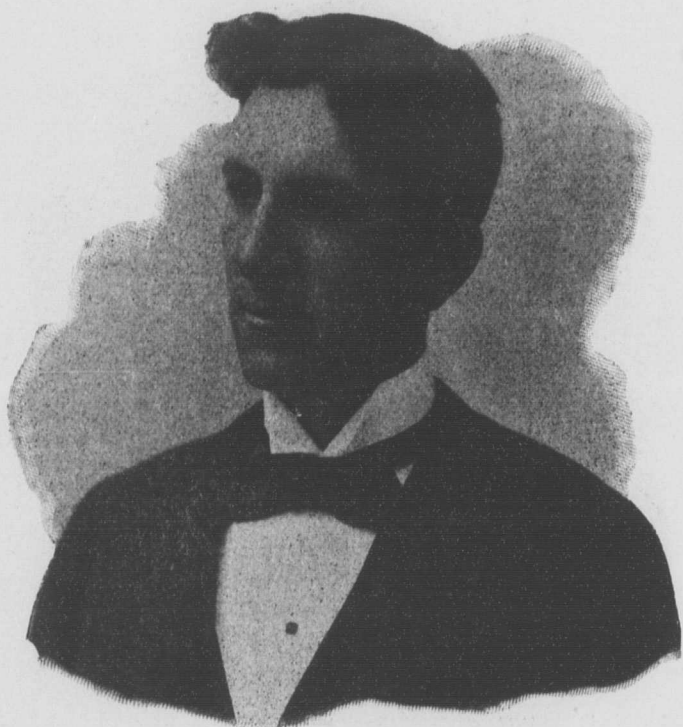
*Flora Fay -*  
MANHATTAN.



*Lucy Ellis*  
HAVENSVILLE.



*Lillie C. Dial.*  
MANHATTAN.



*W. P. Davies.*  
MANHATTAN.



*F. A. Dawley.*  
VINCENT.



*Geo. A. Dean.*  
TOPEKA.



*V. Emrick*  
LONE TREE, MO.



*Geo. A. Grayth.*  
HOWARD.





*Florence Eleanor Fryhofer.*

RANDOLPH.



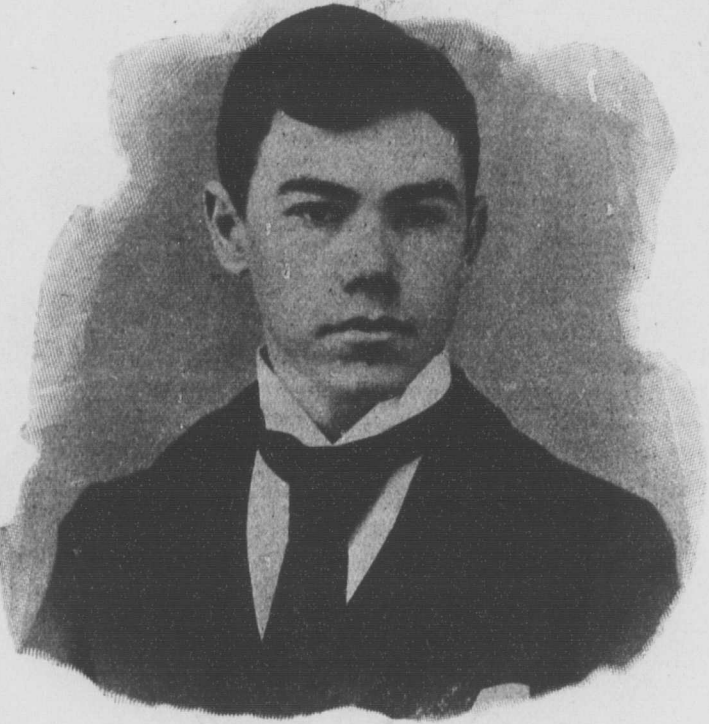
*Hortensia Harman.*

VALLEY FALLS.



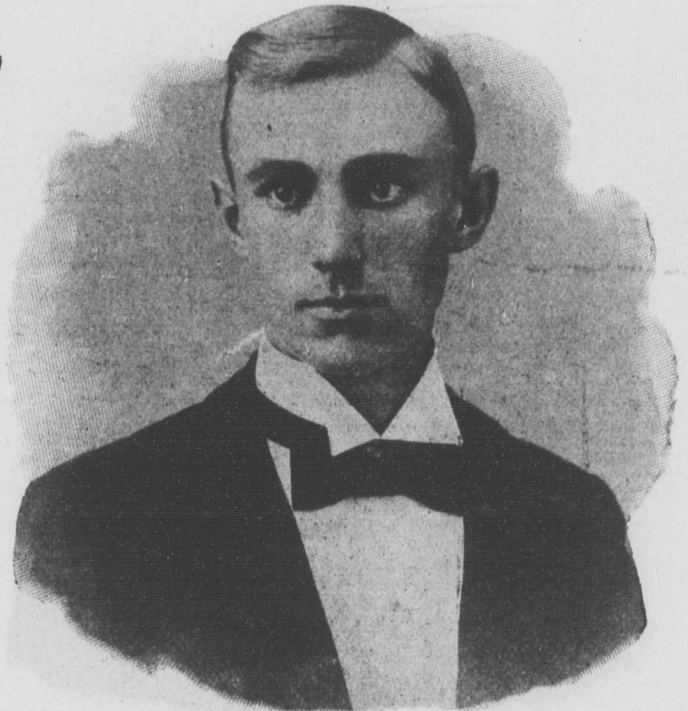
*Maud E. Kennett.*

SILVER LAKE.



*E. H. Freeman.*

NORTH TOPEKA.



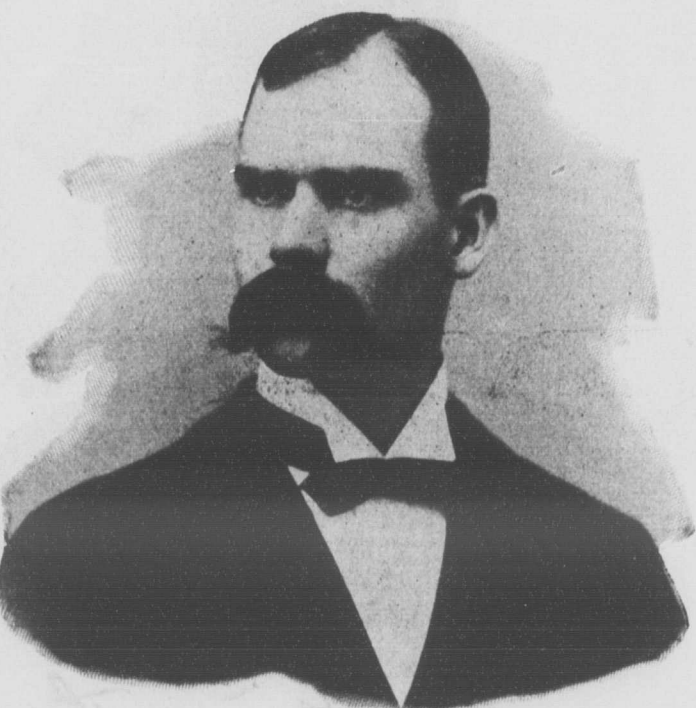
*O. H. Halstead.*

LEONARDVILLE.



*Geo. W. Fryhofer.*

RANDOLPH.



*John B. Harman*

VALLEY FALLS.



*Clarence C. Holinger*

ROSEDALE.





*Laura S. McKeen.*  
MANHATTAN.



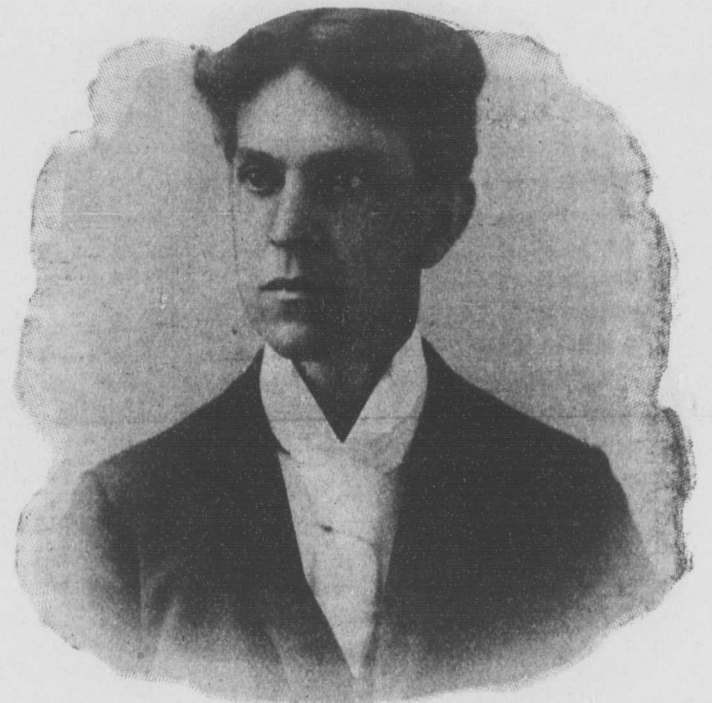
*Ethel Faye Patten.*  
SILVER LAKE.



*Alice Quintard.*  
SILVER LAKE.



*C. Johnson*  
SUCCESS.



*Fred R. Jolly.*  
MANHATTAN.



*J. F. Johnson.*  
SUCCESS.



*W. A. Linbcker*  
MANHATTAN.

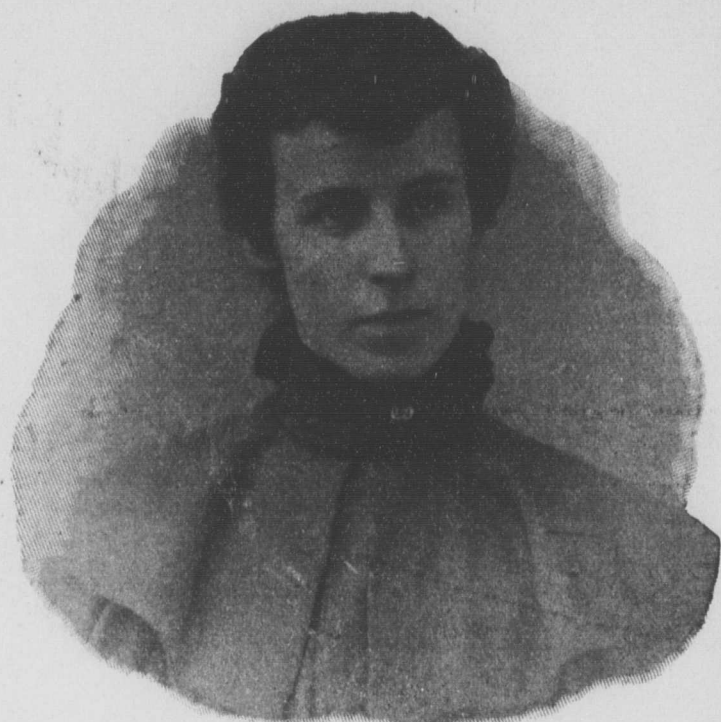


*W. J. Joss.*  
FAIRVIEW.





*Ada Rice*  
MANHATTAN.



*Kitty Myrtle Smith.*  
MANHATTAN.



*Mabelle Gertrude Selby*  
MANHATTAN.



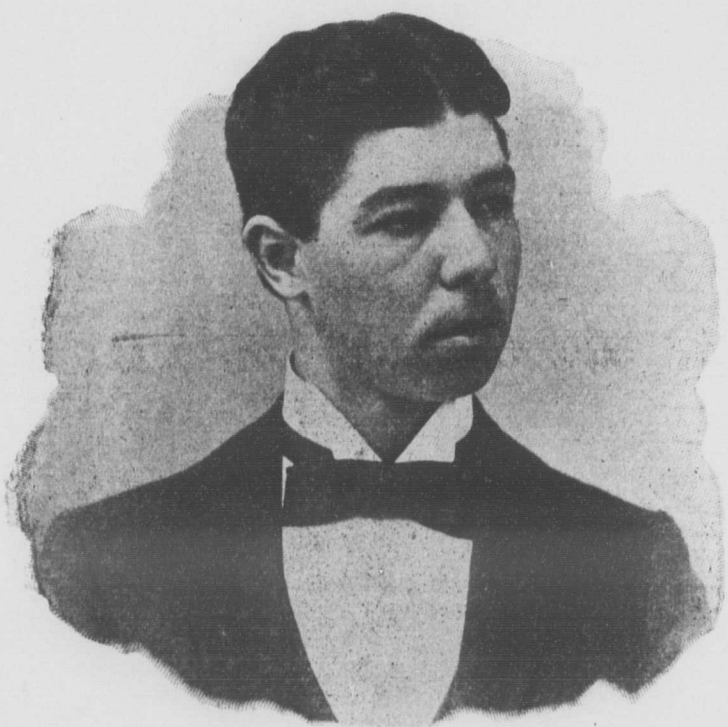
*A. Q. McDavell.*  
MANHATTAN.



*J. M. Morse.*  
MOUND CITY.



*W. H. Painter.*  
MEADE.



*A. Otten.*  
BRENNER.



*Charles W. Pope.*  
TOPEKA.





*Marietta Smith.*  
MANHATTAN.



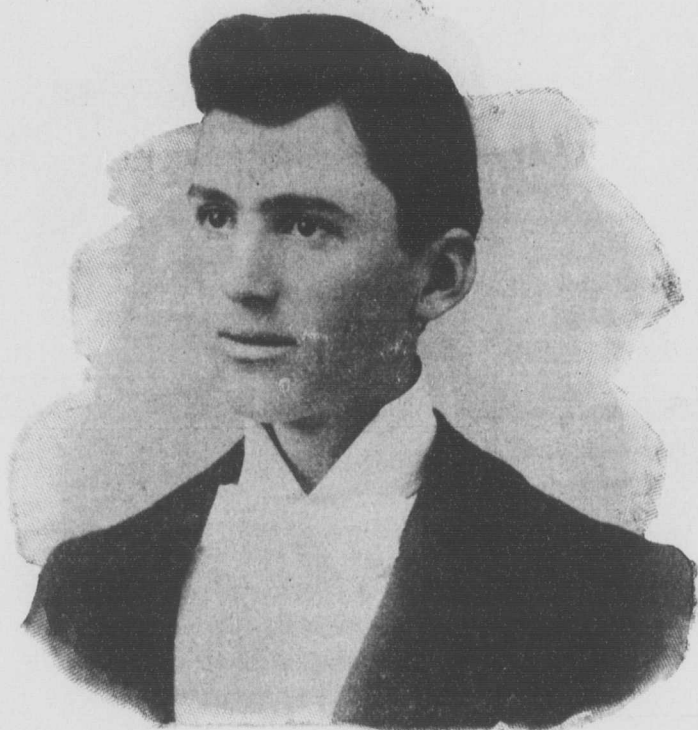
*Cora J. Stump.*  
MANHATTAN.



*Dora Thompson.*  
IRVING.



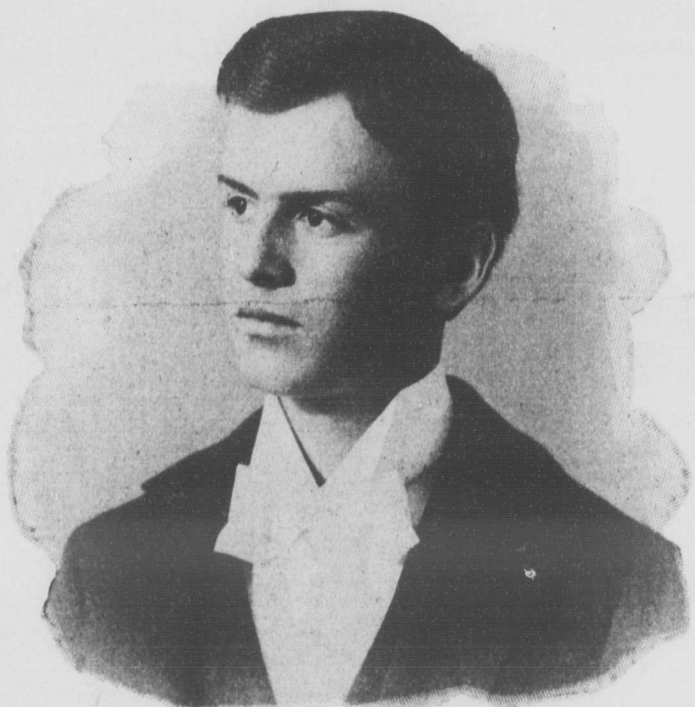
*John V. Patten*  
SILVER LAKE.



*Fred E. Rader.*  
MANHATTAN.



*W. H. Phillips.*  
CHAPMAN.



*R. W. Rader.*  
MANHATTAN.



*B. F. S. Royer.*  
STERLING.





*Ora Yencwine.*

MANHATTAN.



*Olive Mabelle Wilson*

AUSTIN, ILL.



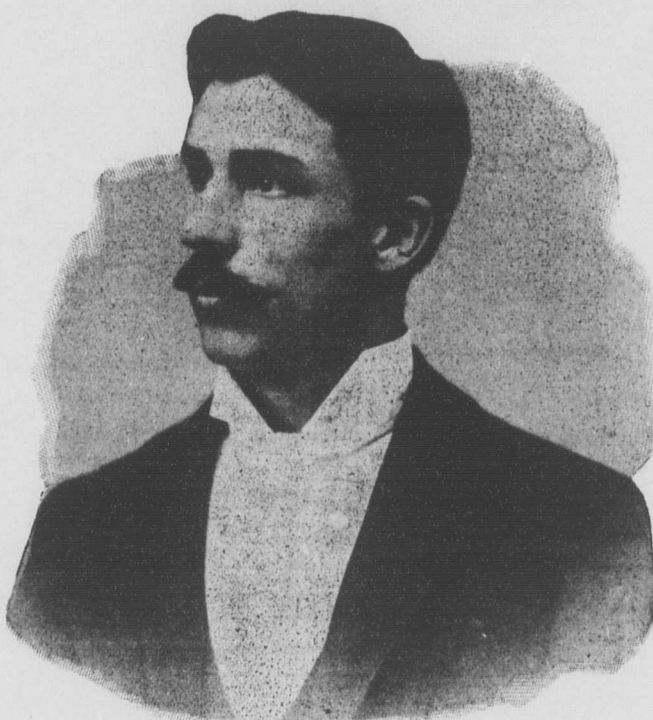
*Mary E. Willard*

WAMEGO.



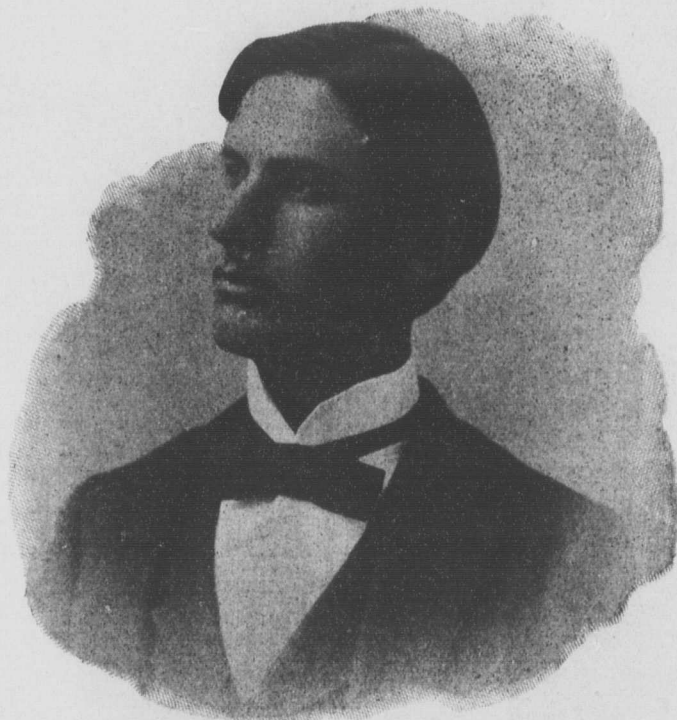
*F. J. Smith*

MORGANVILLE.



*E. P. Smith*

MANHATTAN.



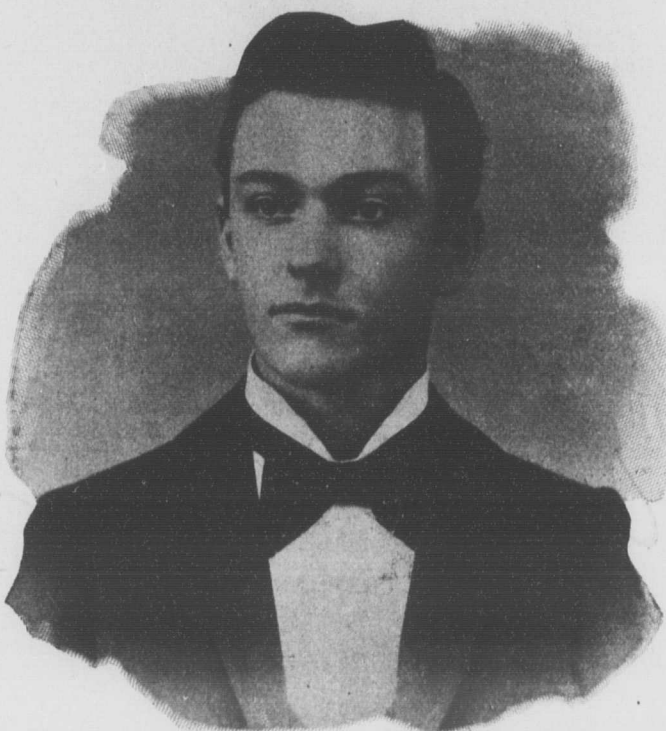
*Chas. B. Selby*

MANHATTAN.



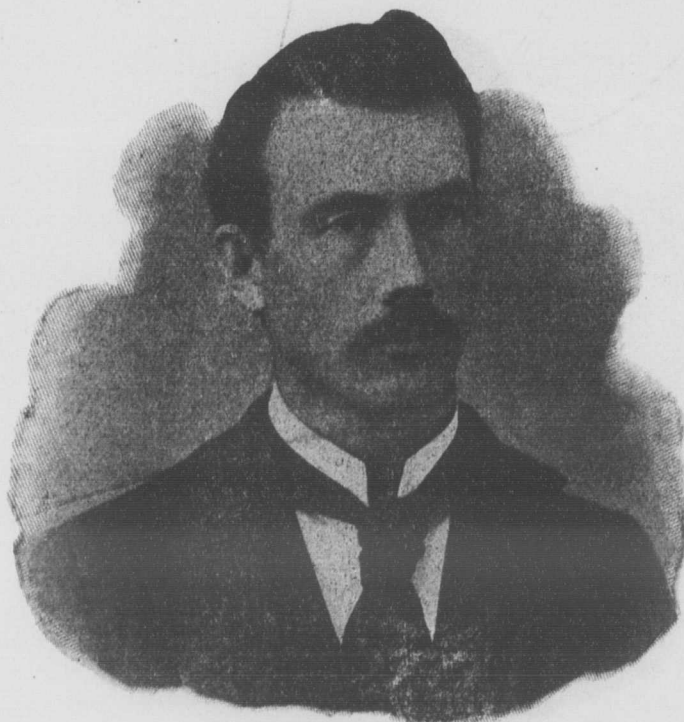
*W. H. Stewart.*

WINCHESTER.



*Elmer C. Trembly.*

COUNCIL GROVE.



*Geo. Whaler.*

BURLINGTON.



# THE INDUSTRIALIST.

VOLUME XX.

MANHATTAN, KANSAS, SATURDAY, JUNE 15, 1895.

NUMBER 40.

## Commencement.

Historical society

### The History of the Most Interesting Week in the College Year.

The twenty-seventh annual commencement of the Kansas State Agricultural College will be remembered for its "Jumbo" class, fifty-seven young men and young women having graduated with the degree of Bachelor of Science. Each of the graduates presented in chapel an abstract of his thesis, making it necessary to begin the exercises at nine o'clock in the forenoon, and, with an intermission of about an hour and a half, continue until four in the afternoon. The speeches were evenly interspersed with music, vocal and instrumental, under the direction of Prof. Brown.

The degree of Master of Science was conferred up-

LUCY ELLIS, Havensville,  
What Shall Our Pleasures Be?

VICTOR EMRICK, Lone Tree, Mo.,  
The Profession of the Teacher.

GEORGE FORSYTH, Howard,  
Industrial Education.

ERNEST HARRISON FREEMAN, North Topeka,  
Astronomy: Its Uses, Past and Present.

FLORENCE ELLEANOR FRYHOFFER, Randolph,  
George Elliot: Her Work in Literature.

GEORGE WILLIAM FRYHOFFER, Randolph,  
The World's Religions.

OSCAR HUGO HALSTED, Leonardville,  
The Distribution of the Mammalia.

EMELYN HORTENSIA HARMAN, Valley Falls,  
The Literature of Democracy.

JOHN BRIGHT HARMAN, Valley Falls,  
Rational Feeding of Live Stock.

RALPH WALDO RADER, Manhattan,  
Agricultural Forestry.

ADA RICE, Manhattan,  
A Force in Education.

BENJAMIN FRANKLIN SIMEON ROYER, Sterling,  
The Progress of Science.

CHARLES BAXTER SELBY, Manhattan,  
Embryonic Development.

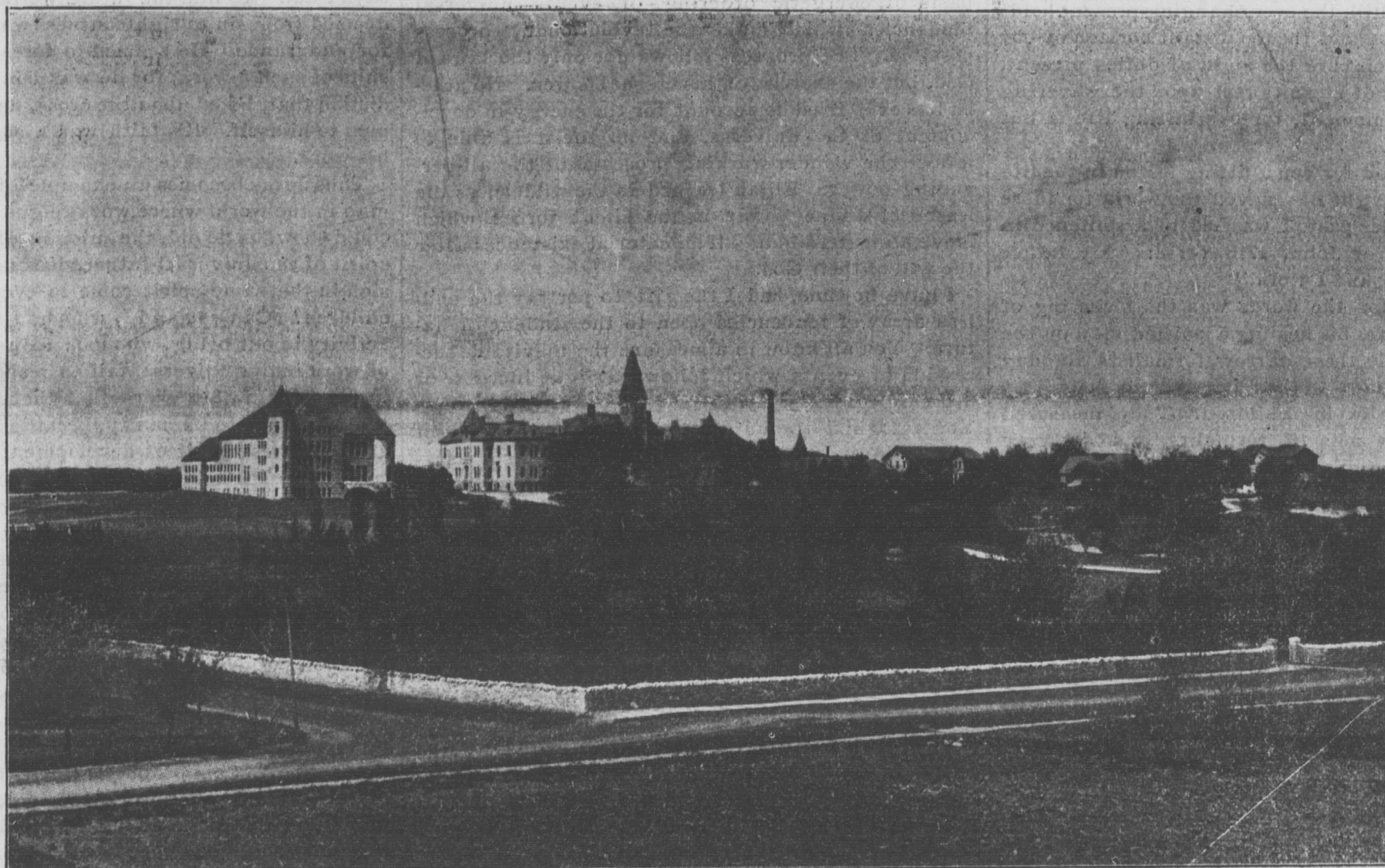
MABEL GERTRUDE SELBY, Manhattan,  
Grecian Mythology.

ERNEST PARKER SMITH, Manhattan,  
Light and Ventilation in City Schools.

FREDERICK JOHN SMITH, Morganville,  
Socialism in the United States.

KITTY MYRTLE SMITH, Manhattan,  
Surface Designing.

MARIETTA SMITH, Manhattan,  
Realism in Fiction, and Howell's Relation to It.



GENERAL VIEW OF GROUNDS.

on three persons—Louis Paul Brous, '86, for proficiency in architecture and designing and mathematics; James Guthrie Harbord, '86, engineering, veterinary science; Bertha S. Kimball, '90, entomology, horticulture.

The graduates and the titles of theses are given below:—

EDWARD JONES ABELL, Scottsville,  
The Duty of the Farmer.

CARL DAVID ADAMS, Osawkie,  
Ornamental Shrubs Adapted to the Climate of Kansas.

ROBERT JOHN BARNETT, Denison,  
The Death Penalty.

BURTON WESLEY CONRAD, Capioma,  
Telepathy.

FLORENCE RUTH CORBETT, Manhattan,  
Economy of Labor in the Kitchen.

SID HENRY CREAGER, Jamestown,  
Advertising.

ELSIE EMELINE CRUMP, Manhattan,  
Variation in Plant Forms.

DAVID THOMAS DAVIES, Manhattan,  
Ensilage in Kansas.

FRANK ANDREW DAWLEY, Vincent,  
A Comparison of the Creation and Evolution Theories.

DAISY DAY, Manhattan,  
The Future of the Novel.

FLORA DAY, Manhattan,  
The Aesthetic and Ethical Influence of Flowers

GEORGE ADAM DEAN, Topeka,  
The Siberian Exile System.

LILLIE CHRISTINA DIAL, Manhattan,  
The Relation of Drawing to Education.

CLARENCE VICTOR HOLSINGER, Rosedale,  
The Culture of the Cherry.

CHRISTIAN ANDRICK JOHNSON, Success,  
Ornamental Vines.

JOHN JAMES JOHNSON, Success,  
The Study of History.

FRED RALPH JOLLY, Manhattan,  
The Glacial Epoch.

WILLIAM IRVIN JOSS, Fairview,  
The Influence of Inventions.

MAUD ESTELLA KENNETT, Silver Lake,  
History of the Drama.

MYRON ARTHUR LIMBOCKER, Manhattan,  
Practical Progress.

SAMUEL ALEXANDER McDOWELL, Manhattan,  
The Teeth: Their Development and Decay.

LAURA SARAH McKEEN, Manhattan,  
The Novel and Life.

THEODORE WATTLES MORSE, Mound City,  
Our Government as Influenced by Some of Our Social Classes.

OSCAR ALBERT OTTEN, Brenner,  
The Hypnotic Medium.

WILLIAM HACKWORTH PAINTER, Meade,  
The Relation of Irrigation to the Development of the Western Plains.

CHARLES WESLEY PAPE, Topeka,  
The Geomys Bursarius, or Pocket Gopher.

ETHEL FAYE PATTEN, Silver Lake,  
The Trained Nurse.

JOHN VERNON PATTEN, Silver Lake,  
The Essay in Literature.

WILLIAM HENRY PHIPPS, Chapman,  
Entomology in the Common Schools.

ALICE JULIA QUINTARD, Silver Lake,  
How to Teach Geography.

FREDERICK ELLSWORTH RADER, Manhattan,  
Wind Power and Irrigation.

WILLIAM HENRY STEUART, Winchester,  
Comparison of the Nicaragua and Panama Canal Routes.

CORA IDELLA STUMP, Manhattan,  
Japanese Art.

DORA THOMPSON, Irving,  
Robert Louis Stevenson: His Life and Works.

ELVEN CREVELING TREMBLY, Council Grove,  
Invention: Its Relation to the Farmer and Farm Laborer.

GEORGE CARPENTER WHEELER, Burlington,  
Studies on a Family of Beetles.

MARY ELIZABETH WILLARD, Wamego,  
The Life and Reign of Queen Elizabeth.

OLIVE MABEL WILSON, Austin, Ills.,  
The History and Influence of Ancient Music.

ORA GERTRUDE YENAWINE, Manhattan,  
The Influence of the Kitchen in the Home.

#### Lecture Before the Societies.

The first exercise of Commencement Week was the lecture provided for by the literary societies on Friday evening. Col. L. F. Copeland, a lecturer of national repute, spoke on the subject, "Seeing the Elephant," suggested by John G. Saxe's poem of the blind men who, approaching an elephant, each from a different direction, and touching, pronounced it the thing it most resembled; thus, one who felt of the animal's side, called it a wall; one who laid hands first upon an ear, said it was a fan; another, whose arms encircled a leg, said an elephant was a tree; while still another, approaching from the rear,



first touched the tail, and cried out that an elephant was nothing but a rope.

So men see life as the blind men saw the elephant. Many of them, taking the life God has given, cheapen it by looking at it wrongly.

The speaker thought man the grandest thing in the world, and woman the most glorious. He believed in the bible account of the creation, but had no sympathy with over-pious people who regard man as a weak worm of the dust. All inventions are but the thought of man.

The lecturer hit from the shoulder the man who lives only to make money; the man who "dresses to kill;" the man who lives for his stomach's sake; the gloomy "graveyard man;" the shallow man; the pretentious man; the overly religious man; the overly neat man (and woman); the man who looks at life through the bottom of a tumbler; the one-sided man, who wants to shave down other people to fit his clothes.

The lecture abounded in witticisms which kept the audience in a roar without losing the moral pointed, and closed with an earnest plea for a larger life.

#### The Baccalaureate Sermon.

President Fairchild delivered the Baccalaureate sermon Sunday afternoon, speaking from the text: "My father worketh hitherto, and I work,"—John V:17:—

The completion of a course of study opens so evidently the door of progress beyond, that none fail to acknowledge the propriety today of thoughts that concern the grander course of life and the still more magnificent range of possibilities in the years of the aeons of eternity. A sermon to the graduates must touch the life yet to be lived, the power yet to be wielded, the victories yet to be won, the peace finally to be secured. Still, the ever-changing present holds perpetual interest, and the too distant horizon of our hopes must not obscure the sight of duties present. The possibilities of eternity rest upon the wavering purpose of this moment, for everlasting life is but one eternal now.

Thinking to find for you a fitting lesson in the life and words of one who has moved the world for these nineteen centuries past, I was led to a sentence in the 5th chapter of John, 17th verse: "My father worketh hitherto, and I work."

The occasion for the words was the bickering of hostile judges upon his healing a palsied man on the Sabbath day. To these narrow formalists, the day was more important to the Creator than body, life, and soul in one of his children. They measured righteousness by acts of formality in accordance with specific commands. Jesus found the higher command in his intimate concord with the spirit of the Creator: "My father worketh always, and I work wherever he gives me a place." What a lesson of usefulness! Our father works unceasingly.

To you whose minds have caught glimpses into the laboratory of nature, it is scarcely needful to mention the unceasing activity of energy in all its unfolding. And yet it is so easy to assume a sort of perpetual motion among the physical forces, without finding the true lesson of activity for us, that we may well tarry a few moments upon the evidences of work in the universe of God.

The immensity of space seems filled with systems of worlds, forever changing their relations, and yet forever the same existence. Every scrutiny of one of these systems leads to greater confidence in our belief that it has been built through a grand succession of events, acts of power, into its present array of suns and planets, and that a similar succession of acts is now taking place to complete the career of our solar system. The energy that whirls these worlds about each other and pushes them to maturity is a perpetual exhortation against slothfulness.

If we touch the history of unfolding life in this earth of ours, we must again learn the same lesson of activity. The revelations of modern science upon the processes of creation emphasize the unceasing activity of that conscious energy which has moulded every form of matter and force, and as its God reigns in it all supreme. The unfinished record is still teaching how God's mighty forces work in the construction of the earth.

The history of men since they began to share in this universal activity teaches the same lesson of usefulness in nature's powers. We have long been accustomed to speak of the progress from age to age in the arts of sustenance, of personal gratification, and of perpetuating wealth and learning. We are just beginning to realize that all human activities are blended in the progress of humanity; and that evil and good alike are made to contribute to welfare in the cycles of time at God's command; and that problems of society and government are as truly worked out in God's way as the problems of material creation. Yet every investigation of today leads nearer to the fact that our "father worketh hitherto"

in the affairs of men. The evolution of races, in physical, mental, and moral characteristics, is as evidently by a working power outside of man's will as is the fact that we "cannot make one hair white or black." Each nation's experience equally reveals "a power that makes for righteousness." The very methods of society, commerce, and government follow a law of growth that forces upon us the idea of God's work in the world and for the world.

The attempt is sometimes made to distinguish the work of God as purely moral, as if the influence that steals upon the mind of man in the "still, small voice" of conscience were separable from the all-pervading power that moves Orion in his course; but the lesson to Elijah in the still, small voice was deeper than form. It taught him that he must not measure the work of Jehovah by ostentation. The storm, the lightning, and the whirlwind are the lowest exhibitions of his power. The Lord God is not in them at all; but he wields such forces with the same perpetual energy of work, while he moves our souls to admiration of the sublimity of its extent in space and time.

That all-pervading influence for good or ill that visits upon children to generation after generation the deeds of their ancestors is a terrible reminder of God's work in judgment upon evil; and a forcible proof of loving kindness in reward of righteousness. If you say this is only natural, so much the more is it the everlasting power that works toward the perfection of its purpose. Every form of evolution in physical, intellectual and moral progress assumes a basis of energetic ordering of events—universal tendencies which make the evolutionary process possible. The progress follows not only the laws of God, but the exercise of his eternal power. No atheist has ever tried to account for the energy in development of the universe, and no theist is able to ignore the wonder-working processes of the all-pervading power. Elijah learned in the wilderness the lesson of divine power in the silent forces which move all material and all immaterial existences after the will of their God.

I have no time, had I the gift, to portray the endless array of tendencies open to the student of nature. You all know in a measure the inevitable succession of events which follows a slight increase or decrease of temperature—a force always at work. You recognize the unmeasured influence of a slight change in the application of light to the earth's surface, though as yet even the physicist passes it by with but a glance in his calculations. Our age is utilizing every day the forces pervading matter, sure that they work, and yet able only to guess at the range of their activity. With still less of certainty we seek to play upon the tendencies of human nature exhibited in ourselves and our neighbors. When soul meets soul in thought, or sentiment, or purpose, we see only the most obvious results, and guess at the power which "worketh hitherto."

The real history of the world is obscured by the noise and smoke and pain of the conflict, or the shouting, the display of victory. The real work of God in developing worlds, in form, variety, life, thought, sentiment, and character—all the types of his creation—has gone forward in the unnoticed influences that acted not only through, but in spite of, commotions.

Not the least striking phase of God's work is its constancy. He "worketh hitherto." In all the record of progress, in stellar space, in rock-stored tablets, in the traditions of all races—there is no evidence of a moment's stay of power. So perpetual is the energy of this activity that we cannot think its absence, and so sometimes do not note its presence. God's wondrous works not only fill all space, but overflow all time; they are all existence infinite in every phase of contemplation.

The spirit of Jesus of Nazareth in his work for the uplifting of humanity was peculiarly a revelation of the Father. He seemed to enter into the pervasive influence for good, and to become a part of it. The temptations to mastery by wealth-seekers, by conquest, by notoriety, he resisted by connecting all good with the revelation of God in the world. To Him the Father's work is all. As a mere child, he explained his absence from parents by saying, "I must be about my Father's business," and when his service as a teacher began, he seemed to enter the work at hand as one called to share in the power that moves the world. In this constant sympathy with the eternal spirit of progress he seems to me most worthy of the name, "Immanuel," signifying "God with us."

As an exemplar of the perpetual spirit of progress, he stands pre-eminent. Every act is in accord with the words of the text. Work for the immediate and

eventual good of man is the characteristic of his life. One earnest purpose proved his mission to men.

In his teaching the way to a better life, he showed the place of faith before formal obedience, and spirit before the letter of the law. While upholding every jot and tittle of the law of righteousness, he denounced a generation of burden makers, who ignored the fundamental principles of good will. In all this he sought to come near to the work of God in the world, who, he said, was to be worshipped "in spirit and in truth."

His work partook of the nature of God's work in being directed to the few who could appreciate. The spiritual suggestions of the parables reached to those who might become truly disciples, learners, not mere followers. His teachings were principles, not works—the spirit of prayer, with the simplest of forms; the height of sacrifice in the exercise of mercy; the genuineness of justice in the light of simple forgiveness; the true glory of usefulness in the humblest of tasks; the grandest of victories in the self-abnegation of the cross; the acme of faith in assuming his works to be the works of the Father in Heaven.

A further proof of his sympathy with every work of God was his exhortation to seek the kingdom of heaven; to lay up treasure in heaven; to gain eternal life rather than immediate good; to risk the individual life of the present for the grander life to be gained in such sacrifice.

The work of Jesus is best set forth by his own spirit of self-sacrifice. "For the joy that was set before him, he endured the cross, despising the shame," says Paul. To him the future welfare of a world redeemed from sin to righteousness was reason enough for endurance. He seemed to foresee the grand results of such a work; for he was confident in his prediction that, lifted upon the cross, he should draw all men to himself. His faith was a constant power in his work.

Thus Jesus becomes an example of the true workman in the world where work reigns supreme. If he could show, as he did, the mission of a worker in the spirit of the universal father, does not the same mission in the same spirit come to every one of God's children? Can you and I, who find the same law of activity in our being, who look upon the same lessons of work in our universe, fail to respond in the same terms, "My father worketh hitherto, and I work?" Work belongs to humanity, because humanity stands at the highest point of development in power to accomplish. If the lower forces of nature are forever active in the unfolding of the universe, how much more must we, who are able to enter into the plan—able to share in the blessedness of doing—act well our part in the promotion of progress. The fact is that all our beings and all our surroundings emphasize duty. Our impulses crowd and our aspirations entice us. Our needs compel and our hopes attract. Our conscience goads and our love stimulates us to work, while faith sustains our power. In spite of our blindness toward future events, we are forced with that calmest of philosophers, Boyle, to say, "I think myself obliged, whatever my private apprehensions may be of success, to do my duty and leave events to their disposer;" or to say with the masterly Burke, in his letter to a friend, "We know that the power which has settled that order which has connected all great duties with toils and perils, and subjected you to it by placing you in the situation you are in, is able to bring you out of it with credit and with safety."

Every human being has to say, "My work is here and now. What I am is made for this place and this time, and I must find my niche in this great universe of motion." To wait for something to do is to lose the power to do it. By doing the tasks of this moment, we prepare for the greater tasks of the next moment. Grant's handling a gun at West Point is a prelude to handling an army in the Wilderness. Even the senseless graspings of a child after the moon are steps toward a mastery of the world about him by his knowledge.

But the readiness to do in the present is most useful, if we comprehend its relation to the long, long reach of eternity. No man who fails to make of his opportunities now the means of greater opportunities hereafter, does his work well. The long look into the future through the immediate events of the present gives meaning and adaptation to duty. Has this that I do today a part in the eternity of advancement I seek for my race? ought to be the question with every worker. If not, you cannot claim to work with the Father, and must expect your building of wood, hay, stubble, to perish in the progress.

Yet, in this long look ahead there is danger of missing the essential elements of our task. If we become excited over the far-off mountain top, we for-



get the little tedious steps by which we must climb, and careless of footing, roll to the valley. So if we are too anxious for the world's enfranchisement to do our neighbor a kindness, we put so much farther away the end we are seeking. He who would do his own work in the spirit of the Father, must do the task that is nearest. It is the spirit that gives to the least the cup of cold water. It finds the work of God everywhere in that which needs most to be done by one's side. We are to seek the hungry, the thirsty, the sick, the imprisoned—not because peculiar merit attaches to such seeking, but because the spirit of true work always finds duty among the least of God's children as well as among the greatest.

Moreover, the work of the Father is everywhere according to the capacity of the worker. If the rain-drop failed to fall because it is not a Niagara, there would be no Niagara. If you and I shirk our little tasks of justice, mercy, loving kindness, affection, because they are little, there can be no social unity. The patriotic nation wields its sword of justice safely, because your sword and mine uphold the grand sentiment of the whole. The great Kingdom of Heaven is ruled by the little deeds of its members.

So, then, the work of master minds is in the spirit of usefulness, without thirst for renown. We have a right to be glad when friends and neighbors welcome our work with praises, "for praise is comely to the upright;" but if praise becomes a motive to our work for the world's need, the work is scarce worth the praise. So far is duty from being disturbed by praise that we sometimes test ourselves to our own consciousness by demanding the task and escaping the praise.

Every man is called to work with the Father in seeking a conquest over the evils of the world, not a superiority over neighbors, friends, party opponents, or even personal or national enemies. The world is yet to find that God conquers enemies by making them friends, so in the ages of progress must we wage the combat of good with evil. Life is a conquest only when the evil has given place to good by being itself the basis of welfare. Men really conquer the evil propensities of the world only when those propensities are turned into usefulness. The warrior standing with foot upon the neck of his enemy is a poor symbol of victory; for all his power is used in holding his enemy down, while the struggles of his victim are pure waste. The true victory is the turning of every energy to welfare, every hostile force into a friendly help. The victories of peaceful commerce outweigh a thousandfold the victories of war, because the conquest is genuine and complete.

With such an ideal of work in God's world as a part of God's work, every man can bear his share of the world's burdens in faith. Confidence in the outcome of any undertaking gives half the power for its accomplishment. One who takes up his work from hour to hour as God gives it to him, knowing that in his being and exertion is the power of the everlasting Father, knows that the outcome of true, faithful exertion is secured. His work is easy and his burden is light in his perfect accord with the outcome. He accepts the thought of the poet—

"Let us, then, be up and doing,  
With a heart for any fate;  
Still achieving, still pursuing,  
Learn to labor and to wait."

I have little sympathy with the man whose energy lies idle because he "will not work for nothing and board himself." I have more with him who "wants to see the chips fly." But the great work of the universe is done, not when the greatest commotion reigns; not when the compensation follows swiftly, but in the quiet workings of all-pervading forces. So each human worker must learn by faith to leave the event to God, sure that every wholesome influence tells in the summing up of his power. It takes generations of patient endurance to make the man of noblest character, and every unknown mother whose son or daughter takes up her patient energy has wrought his part in the work of God. Who knows how many mute, inglorious Miltons led the way for one who voiced the energy of all his ancestors? We do know how every poet, pagan, and Christian up to Milton's time helped him to phrase his thoughts on paradise. We have not traced the threads of inwrought golden influences which generated the "myriad minded Shakespeare," though we can find the rough, unpolished gems of others' thoughts stored up for a thousand years to glisten in his literary diadems.

So you and I are today doing the work that is to make the power of the world for ages hence, if we work the works of God.

While such is the task of every human being to whom God gives a place in the world, the call to edu-

cated men and women has peculiar emphasis. They can, if they will, enter more fully into the spirit of progress for a world and a universe. They should have a clearer insight in reading the record of the past, and a surer foresight for the future. They should be touched with broader sympathies for the times they live in, and fuller appreciation of the world's great teachers. Having a stronger reason for their faith, their faith should be stronger and their purpose more persistent.

For the same reason their duties as workers with God become more explicit. They should know more fully than others the social trend of the times, and be able to foresee its consequences. They of all men should be able to analyze social forces in all their complexity. They, having less temptation to strike wildly, become less subject to mere impulse, should act with clearer intelligence. A misdirected zeal may be endured, if ignorance betrays one; but a clear-headed thoughtfulness should let zeal wait upon intelligence. Today, if ever, we need knowledge in place of guesses for the solution of every social, every national problem. The leaders in such accurate inquiry must come from the trained thinkers. Those who have been so keen of sight as investigators of past records must be equally keen as searchers after present ills and present remedies. Each problem of life for the poor, the illiterate, the degraded, the oppressed, the misguided vagabond, and the misdirected millionaire, must be viewed as a part of the grander problem for the race. God's work for the race must stand in bold relief before the student of details can find their relative importance. An earnest thinker must feel the utmost range of action, and hold back from rash decisions of questions which concern eternity.

At the same time, he cannot but recognize his words and works of today as a part and parcel of the endless work God has wrought and is still working. He knows better than to try to shirk responsibility of the influence which belongs to him. He must act, but with zeal according to knowledge. Then, with a prayer, such as the earnest student always prays, that he may be led into all truth, he seeks the fountain of wisdom and the source of power by genuine search into the ways of God among men.

Educated thinkers, of all men, know the need and importance of sacrifice for higher welfare. They know that the world has climbed upon the stepping stones of dead heroes, as well as dead selves, to its present height of welfare. They know that a temporizing love of place or pelf makes the brightest of mankind into the meanest. They know that the grandest results accomplished in science, arts, liberty, and religion have been the reward of uncalculating devotion to truth against the onsets of brutish force or more brutish opinion. They ought to have the strength and the virtue to stand firm in adherence to truth, let the immediate results be what they may.

The tower of human rights and human welfare shall yet reach to heaven. But every stone in the structure will finally be simple, unadulterated truth. The wise man knows that truth for him means duty. Indeed, the problem of rights is always the problem of duties. My hope of the good time coming I can measure by my readiness to do every duty now. When you and I as men of culture in this nineteenth century can show that we stand ready to do our part of God's work faithfully, our part of the problem is solved. I have yet to find the man who is unwilling to make other people do their duty. Every street corner furnishes an apostle of reform in other men's lives. How many of them have won the conquest of sloth in themselves, and are workers in God's army of usefulness?

Thus the ranks of educated men and women are the front ranks. You, my friends of the Class of '95, are promoted today in being recognized as holding the signal posts of duty. If you fail to feel this responsibility to work, in this universe of work, toward the end of all progress in God's plan, who can be blamed for failing? If the color bearers fall back, who shall press on for victory? You have an introduction to sources and methods of knowledge; you must pass on the light. You have taken some steps in the road of duty; why should you ever falter?

You should not fail, or even falter; but unless your inspiration is now, and continues to be, a genuine sympathy with the work of the Father, your very eminence will work destruction rather than welfare. The same genuine sympathy with God's work in the world is your safest guide to daily duty. Every day will bring its questions of right and wrong that bear upon life and life's work. It is never a safe test to ask, Will it do any harm? God has better work for all of us than merely escaping harm. "That man is

idle," says Socrates, who might be doing better than he is. So doing no harm is always doing the harm of idleness, which is one of the worst of ills. The true test for you, my friends, is, Will it do any good?

Your class motto, "Know, to do," suggests your present enlistment in the ranks of duty. It accords with the spirit of your growth and your training. Are you sure that in the confusion of battle you are following always after the leader on the side of truth—toward the universal end of all righteousness? Are you thoroughly disciplined troops, obedient to a commander whose orders are not only final, but always right. You expect to be officers in these ranks. Have you learned to "rule by obeying Nature's powers," as Tennyson tells us? Pardon me these questions, which you can answer only to your own consciences, but my sympathy with you today makes me bold to act the mentor. For four years past have I tried to think your thoughts that I might aid their development. I have enjoyed your growing interest in the larger and grander developments of life. I would today still feel your progress assured by your hold upon the everlasting truths in God's universe. Would that I could help you to see, as I see Him, the great exemplar of humanity in God's work, who is also God among men. He still offers you the leadership under the easy yoke and light burden of true service. He still presents the true advocacy of human rights in the fulfilment of human duties. He still invites to perpetual conquests over human ills in victory over personal lusts. He still promises the glory of heavenly blessedness in showing the work of Jehovah. Man, made in the image of God, may share in the throne of God. May you, each of you, having done well in the little work assigned to you each day, be called to rule with the rest of God's children in the realm of eternal blessedness and power. We shall know then how God forever works, and delight to do his will.

#### The Annual Address.

The reputation of Dr. F. W. Gunsaulus, President of the Armour Mission, Chicago, had preceded him, and when he reached the College Monday evening he found a large audience eager to hear him lecture on "Oliver Cromwell." He regarded Cromwell as a much abused and grossly misrepresented man in the earlier encyclopedias. He reviewed comprehensively the life of the great man, and showed him to have been the central figure for good in the great revolution in Europe. Cromwell was the result of a series of causes which had worked in England for centuries. His revolution was simply evolution delayed.

Cromwell was a power in his time—one of the greatest friends of pure scholarship ever given to the world, and the champion of humanity. His unconscious nobility led him high on the ladder of fame ere he was aware of it. Engrossed in his labors for the betterment of humanity, he had no thought of where he was mounting.

Dr. Gunsaulus spoke for almost two hours, and closed with a climax fitting well his subject.

#### The Alumni.

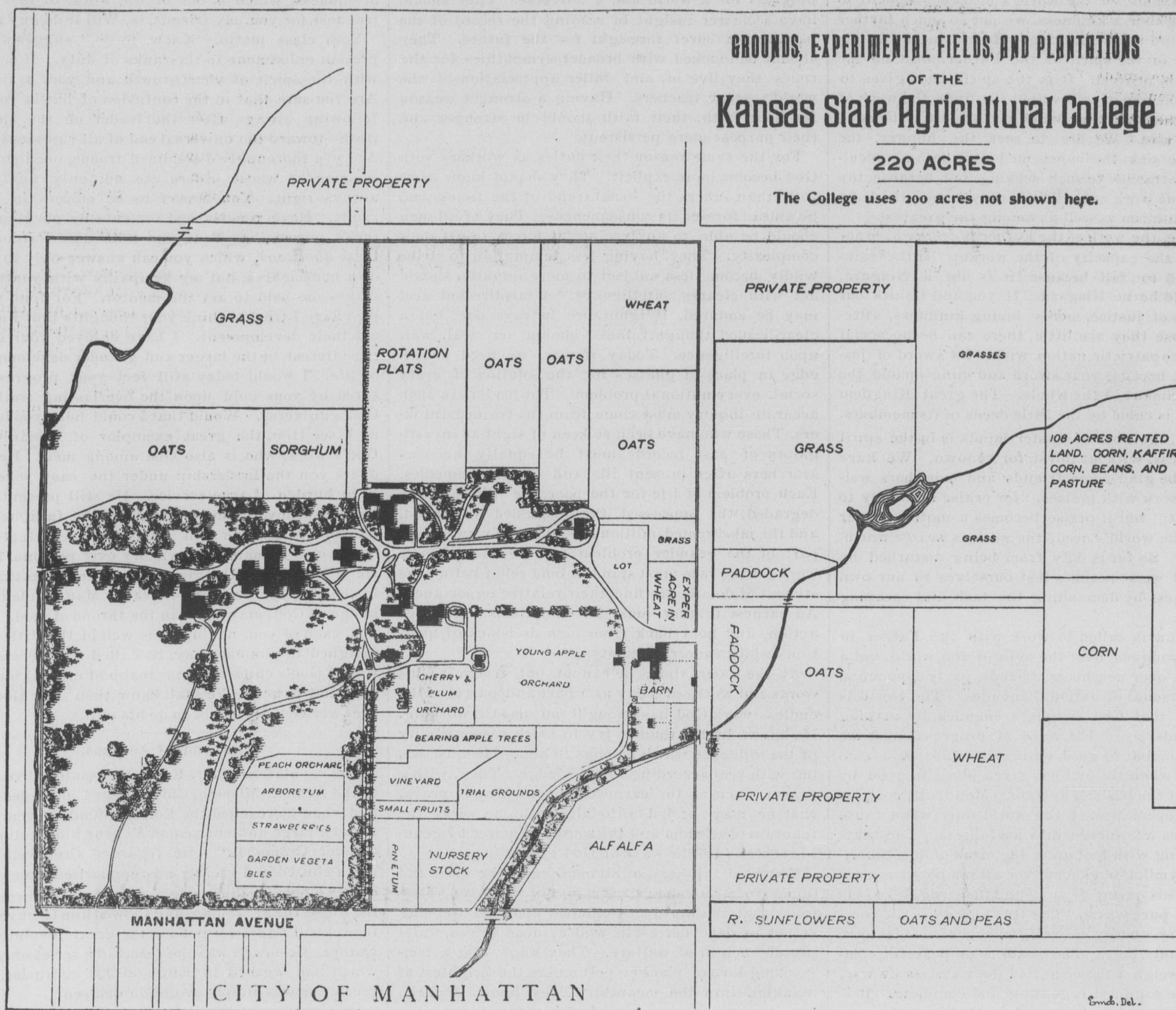
The attendance of graduates was gratifying for an "off year." The triennial reunion of next year should draw three times the number that were present Wednesday.

At the meeting of the Alumni Association Wednesday afternoon, the following officers were elected for the ensuing year: Sam Kimble, '73, President; W. H. Olin, '89, Vice-President; Jennie R. Smith, '94, Secretary; Julia R. Pearce, '90, Treasurer.

The following graduates were present:—

'67—Emma L. Haines-Bowen, Manhattan.  
'73—Sam Kimble, Manhattan.  
'75—R. E. Lofinck, Manhattan.  
'76—Nellie Sawyer-Kedzie, Manhattan.  
'77—Ella S. Child, Manhattan; G. H. Failyer, Manhattan; Wm. Ulrich, Manhattan.  
'81—Dalinda Mason-Cotey, Logan, Utah.  
'82—Mattie E. Mails-Coons, Manhattan.  
'83—Mary C. Bower, Manhattan; Emma E. Glossop, Emporia; William J. Griffing, Manhattan; Phoebe E. Haines, Manhattan; Jacob Lund, Manhattan; Julius T. Willard, Manhattan.  
'84—L. Day Gardiner, Bradford; Geo. C. Peck, Junction City.  
'86—Louis P. Brous, Manhattan; Ada H. Quinby-Perry, Perry, O. T.; Ida H. Quinby-Gardiner, Bradford; Minnie Reed, Argentine.  
'87—Claude M. Breese, Manhattan; Frederick B. Elliott, Manhattan; Fred G. Kimball, Hastings, Neb.; Frederick A. Marlatt, Manhattan; Mary E. Moses, Manhattan; James E. Payne, Manhattan.  
'88—William C. Moore, Junction City; Lora L. Waters, Manhattan.  
'89—Joseph W. Bayles, Ottawa; Judson H. Criswell, Manhattan; Albert B. Kimball, Scandia; Mary C. Lee, Manhattan; Walter H. Olin, Osborne; Jane C. Tunnell, Manhattan; Henry S. Willard, Manhattan.  
'90—John Davis, Ashland; Grant Dewey, Manhattan; Schuyler C. Harner, Leonardville; Bertha S. Kimball, Manhattan; Harriet E. Knipe, Manhattan;





Nellie P. Little, Manhattan; Silas C. Mason, Manhattan; Julia R. Pearce, Manhattan; Harry N. Whitford, Manhattan.

'91—Judd Noble Bridgman, Atchison; Robert James Brock, Manhattan; Francis Charles Burtis, Manhattan; Anna Fairchild-White, Manhattan; Amy Myrtle Harrington, Junction City; Delpha May Hoop, Manhattan; Mayme Amelia Houghton, Manhattan; Bessie Belle Little, Manhattan; Nellie E. McDonald, Manhattan; David Collins McDowell, Manhattan; Lillian Alice St. John, Manhattan; Bertha Winchup, Manhattan; Effie Jeannetta Zimmerman, Manhattan.

'92—Grace M. Clark, Manhattan; George L. Clothier, Manhattan; Elizabeth Edwards, Randolph; John William Abraham Hartley, Manhattan; Daniel Henry Otis, Manhattan; Arthur Daniel Rice, Keats; Fred C. Sears, Manhattan; Birdie E. Secrest, Randolph; May Secrest, Randolph; Ruth Tipton Stokes, Manhattan; Harry W. Stone, Sioux City, Iowa; Ora Rebecca Wells, Irving.

'93—Corinne Louise Daly-Burtis, Manhattan; Laura Greeley Day, Manhattan; Ione Dewey-Earle, Denver; Mary Maud Gardiner, Manhattan; Mary Frances Burgoyne Harman, Valley Falls; Fred Hulse, Manhattan; Charles Augustus Kimball, Manhattan; Thomas Eddy Lyon, Keats; Rose Edith McDowell, Manhattan; Eusebia DeLong Mudge, Eskridge; Nora Newell, Manhattan; John Dewitt Riddell, Kansas City, Mo.; Fred Raymond Smith, Manhattan; George Wildman Smith, Manhattan; William Elmer Smith, Randolph; Charles Henry Thompson, St. Louis, Mo.; George K. Thompson, Irving.

'94—Frank Weber Ames, Manhattan; Clara Francis Castle, Manhattan; George Luther Christensen, Manhattan; John Cornelius Christensen, Cleburne; Lorena Estella Clemmons, Manhattan; Alverta May Cress, Manhattan; Jephthah W. Evans, Manhattan; Isabella Russell Frisbie, Manhattan; Eugene Leonard Frowe, Topeka; Walter Harling, Olsburg; Lorena Marguerite Helder, Manhattan; Isaac Jones, Manhattan; Stella Victoria Kimball, Manhattan; Mary Eliza Lyman, Manhattan; William Henry Moore, Manhattan; Victor Irwin Sandt, Marysville; John Alfred Scheel, Elk; Jacob Ulrich Secrest, Randolph; Charles Chrisfield Smith, Manhattan; Jennie Ruth Smith, Manhattan; Wesley Ohio Staver, Kansas City, Mo.; John Stingley, Manhattan; John Edwin Taylor, Ber-ryton; Lucy Helena Waters, Manhattan.

#### The Military Drill.

Was witnessed Wednesday afternoon by several thousand visitors. The Cadets appeared to good advantage in their new uniforms, and thanks to Captain

Cavanaugh's thorough instruction, drilled like veterans. Battalion drill, dress parade, and company drill followed in quick succession, each executed in a manner to reflect credit upon Cadet Captains Steuart, Patten, and Jolly. The sham battle ended the exercises of the day.

By invitation of Captain Cavanaugh, the exercises were reviewed by Brigadier General Hughes, Adjutant General Fox, Major Orr, and Lieutenant Phillips of the Kansas National Guard, and Lieutenant Catlin of the Third Artillery at Fort Riley. They had nothing but words of praise for the Cadets.

#### Notes from the Shops.

Silence! all is silence! No more do we hear at anvil and bench the busy hum of activity. The body of students who were a week ago working away on metal and wood, are now scattered to the four corners of the State, and are, we trust, finding some practical use for the knowledge gained while here. The work of the year has been hampered somewhat because of the lack of funds to buy material. This accounts for the small display made Commencement week. The work in the wood shop was at special disadvantage during the fall and winter terms because of the over-crowded condition of classes. Twenty men is the maximum that any one instructor can handle to good advantage, yet several classes had as high as forty to forty-five beginners enrolled, resulting in great loss to each member. As a right or wrong start in a large measure determines the success or failure of the student, it actually makes a great hardship to those in such over-crowded classes.

While the student body is gone, the shops will not be entirely deserted this summer. By appropriations made at the last session of the Legislature, the Mechanical Department has about \$12,000 to spend in repairs and new work before the beginning of the next college year. To do this work, besides foremen House, Herrold, Gundaker, and Lund, students Steuart, McCauley, A. C. Peck, C. K. Peck, Dorman, Forsyth, Bower, Lee, Chase, Ginter, Christensen, and Webster have been employed for the summer.

Among the many jobs to be done are: A new floor in the wood shop, Chemical Laboratory and Armory, new roofs on the Armory and Farm-house, putting in 161 inside blinds in Science Hall, and completion of the steam plant system in the Armory; increasing

the radiating surface in the Shops, Chemical Laboratory, Science Hall, and Armory; building new coal-pit; and new bridge at south entrance; repainting roofs, buildings, and odd jobs too numerous to mention.

The work now in progress is mainly on the steam extension to the Armory. A number of days will yet be required for its completion. The recent heavy rains did some damage to the work already done on the line, washing the tiles full of mud, and in places causing damage enough to necessitate the relaying of the tiles.

The electric light extension to the chapel has been completed, and added much to the attractiveness of the evening exercises during Commencement week, the two hundred 15 candle power lights making the room quite brilliant. The old gas lights are darkness when compared with them.

The department has taken charge of the hydrographic station established here by the U. S. Geological survey. The height of the Blue River is reported daily by Mr. J. C. Bush, at the Rocky Ford bridge, and soundings and current measurement will be frequently taken during the summer with apparatus recently received from the government.

ED. H. WEBSTER.

Availing himself of the fact that President Fairchild, of the State Agricultural College, expects to make a tour of Great Britain and the countries of Europe during the present summer, Secretary Coburn has requested and commissioned him on behalf of the Kansas Board of Agriculture to make an investigation of the agricultural and horticultural methods, productions, and markets of those countries in which he may travel, and especially such aspects of them as may have a bearing upon or afford useful suggestions along similar lines in our own country. It is Secretary Coburn's desire to have Dr. Fairchild report the substance of his observation and conclusions in an address before the Board of Agriculture at its annual meeting in January next, the proceedings of which will be given wide publicity in the Board's succeeding quarterly and biennial reports. It is expected the information obtained will not only be of great interest, but exceedingly valuable.—*Kansas Farmer*.



## Calendar.

1894-95.

Fall Term—September 13th to December 21st.

Winter Term—January 8th to March 29th.

Spring Term—April 1st to June 12th.

June 12th. Commencement.

1895-96.

Fall Term—September 12th to December 20th.

## To School Officers.

The College Loan Commissioner has funds now to invest in school district bonds at par. The law requires that no bonds be sold at par or less without being first offered to the State School Fund Commissioner and the State Agricultural College. Address C. E. Goodyear, Loan Commissioner, Oatville, Kan.

## GENERAL LOCAL NOTES.

Several gold watches were among the beautiful presents received by the graduates.

The exhibition of students' handiwork in the various industrial departments was unusually full,

## Board Meeting.

The Board of Regents met Tuesday morning with all the members present but Mr. Hoffman.

President Fairchild and Mrs. Kedzie were granted absence during vacation for a trip to Europe.

Professor Olin was allowed to instruct in Riley County institute this summer.

Captain Cavanaugh presented the question of wearing of uniforms, and it was voted that the Cadets be allowed to wear them only when on duty.

The Librarian was granted leave of absence for six weeks to attend a library school.

The Board met Tuesday afternoon with all the members present.

The recommendation of the Faculty as to conferring degrees was adopted.

The Secretary and the Treasurer were authorized to make arrangements to meet the May pay-roll.

The salaries of Professor Mason and Secretary Graham were made \$1,500 from September 1st, next. Professor Will, Miss Harper, and Miss Rupp were retained in their present positions. In view of the

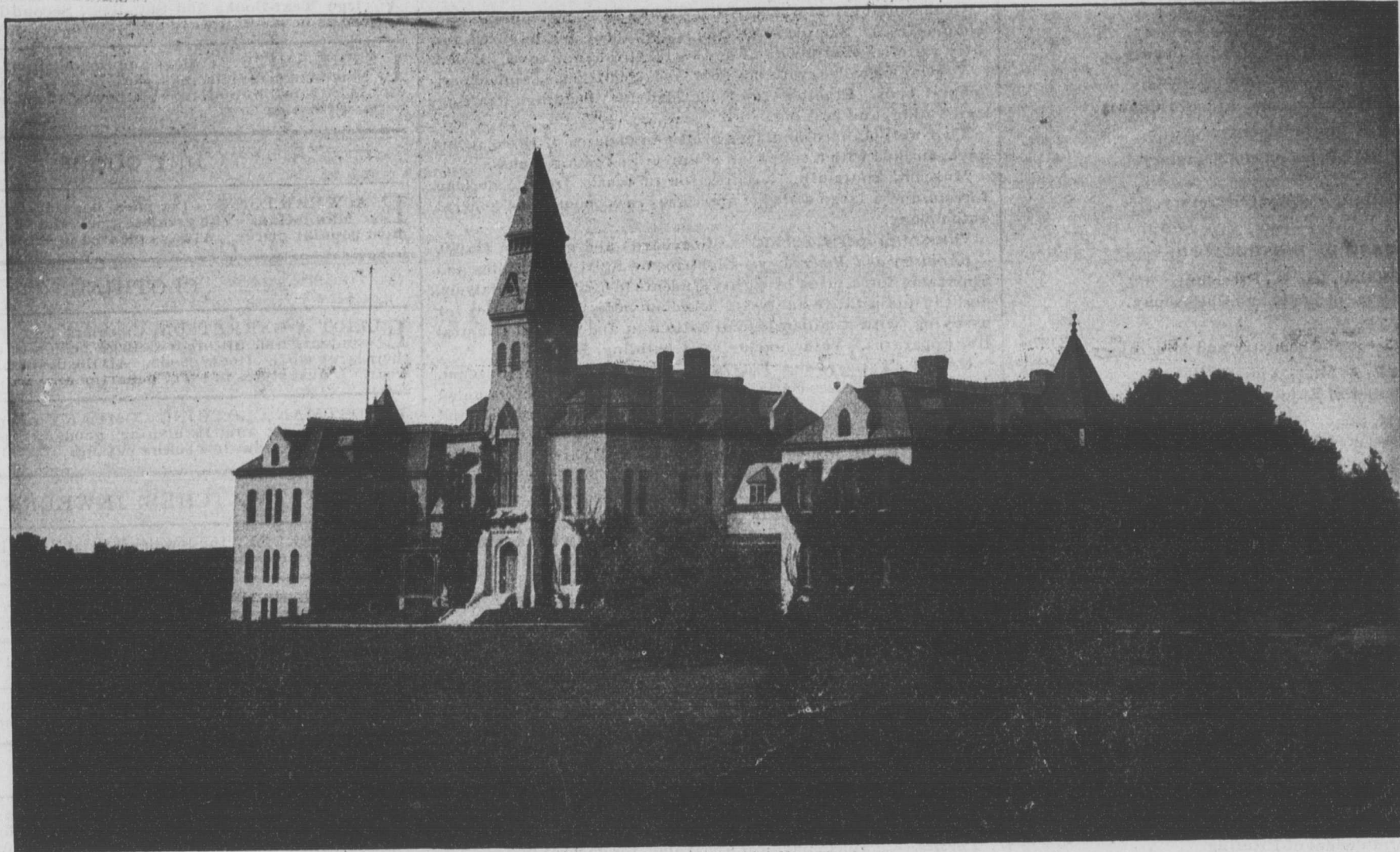
After an eastern trip of a month, the young folks will begin housekeeping in town.

Miss Dora Thompson celebrated her graduation by marrying on the day after Commencement, Mr. Fred Winters, a young merchant of Blue Rapids, and the same afternoon went to her new home to "commence" in earnest the duties of life.

## Notes from the Orchards and Gardens.

Everything about the grounds has taken a boom since the rains. Trees are growing more rapidly than they ordinarily do when spring opens, and other things in proportion. It is several years since the soil was so well saturated with water, and as the grounds were remarkably free from weeds when the rains came there is little to be desired in these respects.

Apples sat remarkably well in the spring, but they have been steadily dropping during the dry weather and the hot windy weather of May 27th and 28th al-



MAIN COLLEGE HALL.

and with many good words from intelligent critics.

The ladies of the Christian Church served dinner to the hungry crowd that thronged the Armory in a manner satisfactory to all concerned. The gross receipts reached almost \$200.

Several graduating theses on topics suited to its columns will shortly appear in the *Kansas Farmer*, whose editor, formerly our Professor Cowgill, heard the abstracts delivered.

Many improvements will be noted by students who return in September. A host of busy workers are employed in the departments, and thus early their labors show something of what may be expected by the opening of the term.

The Baccalaureate sermon published in full in this issue, will have much of interest for the larger part of the Class kept from the exercise by the heavy rainstorm of Sunday afternoon. It is well worth a careful reading by everybody.

This edition of the *INDUSTRIALIST* consists of sixteen pages and ten thousand copies. It will reach many new readers who, after looking over it carefully, are asked to preserve it for reference or pass it along to some interested person.

President and Mrs. Fairchild leave this afternoon on their European trip. They spend Sunday in Kansas City with their daughter, Mrs. Kirshner, and on Friday next join Mrs. Kedzie in Montreal, from which port they sail the next day on the Allen Line steamer *Parisian*.

"Obstreperous" people who persisted in driving over lawns and trees and hitching their horses to trees gave the College authorities much trouble. Persons who cannot conform to the few simple rules of conduct laid down for all alike on the occasion of Commencement will oblige everybody by staying away.

Prof. Howard M. Jones, for two years past instructor in Rhetoricals, resigns to take a course of three years in the Chicago Theological School with five of his Oberlin classmates. Prof. Jones will be missed in College circles, where he was well liked by both his co-workers and students. He takes with him the good wishes of a host of friends who wish him success in College, and in the ministry, which he plans to enter on the completion of his course.

resignation of Mr. Jones and the return of Professor Nichols, the services of Rhetorical Instructor were dispensed with for next year, provision for such training to be made in a re-adjustment of duties among the several members of the Faculty.

Regent Daughters was chosen to represent the College, and Professor Georgeson to represent the Station, at the Denver meeting of the American Association of Agricultural Colleges and Experiment Stations.

President Fairchild was authorized to secure the printing of an illustrated circular similar to that issued last year.

Appropriations were made as follows: For hose and labor in the Horticultural Department, \$255; for a voltmeter, \$70; for expenses of collecting botany specimens, \$75; for help in herbarium, \$60; for extra edition of the *INDUSTRIALIST*, \$200.

An appropriation of \$750 was made from the Station fund for the purchase or erection of a house for foreman.

The estimates of the Station Council for the current quarter were approved.

Professor Georgeson was allowed to purchase twenty steers for continuation of the feeding experiment next winter; to have wagon scales and bullock scales repaired; to secure herd books to complete files; and to purchase a Jersey bull calf.

The Board adjourned to meet on Tuesday, August 6, at 3:30 P. M.

## GRADUATES AND FORMER STUDENTS.

Mrs. Tracy Wikander-Biddle, Third-year in 1885-6, attended Commencement exercises as the guest of Miss Katrina Krudop, of College Hill.

Geo. W. Fryhofer, a member of the Class of '95, was chosen on Commencement Day as educational director in the night school of the Y. M. C. A. at Sioux City. His duties begin soon.

R. K. Peck, Fourth-year in 1884-5, found a few familiar faces on the grounds during his visit, one day too late to see Commencement. He is located at Conway Springs, Kansas, and is doing service for Uncle Sam as mail clerk.

Mr. R. J. Brock, '91, and Miss Mayme A. Houghton, '91, were married Wednesday evening, June 12th, at the residence of the bride's parents in Manhattan.

most finished them up. A few trees are still fairly full, and all that are left on the trees are growing finely. What is said of apples will apply equally well to pears, peaches, plums, and apricots.

Strawberries held on remarkably well this year owing to the favorable season. The picking made today, June 17th, amounted to nearly a crate, and many of the berries were as fine as any that have been picked. Manchester is again proving itself to be a remarkably fine late berry, and is worthy a trial in a collection of any size. Probably not more than one more picking will be made, and this more for the record than for the berries obtained. So far fourteen hundred and forty-four boxes have been picked, the greater part of which have been sold at twelve and one-half cents per box. This of course makes no allowance for what the birds, feathered and otherwise, have been able to get off with.

The peach trees budded last fall and cut back this spring are making a fine growth, some of the shoots being already from three to four feet in length. By next spring they ought to be fine young trees.

The grape crop will be very light this year. Until lately the vines were making a very poor growth, but since the rains they are coming out much better. The various bushes of the wild rose (*Rosa setigera*) about the grounds are very handsome just now with their clusters of blossoms varying from the beautiful pink of the youngest blossoms, more or less streaked with a darker shade, to the nearly white of the older blossoms. This rose is worthy of more general cultivation than it receives. It is especially valuable coming as it does when all other roses are out of bloom.

Another very beautiful thing is *Spirea Billardi*. Both the pink and white forms are in blossom, and together they make a very pleasing effect. Never before have the bush honey suckles (*Lonicera Tartarica*) fruited so abundantly, and the bright red and orange of the fruit make them almost as attractive as when in bloom.

F. C. SEARS.

A repetition of last summer's drouth is not likely, but it will be well to be on the alert to conserve the moisture that falls. This is best done by cultivation, and if this is thorough, even though there should be a shortage of moisture, one will know that he has made the best of the situation.—*Live-Stock Indicator*.



## THE INDUSTRIALIST.

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## STATE AGRICULTURAL COLLEGE

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A barn 50x75 feet, expressly arranged for experimental uses; and connected with it a general-purpose barn, 48x96 feet, for grain, hay, horses, and cattle. Both buildings are of stone, and are provided with power, and equipped with improved machinery for shelling, threshing, cutting for the silo, and steaming.

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Small-fruit gardens, with two hundred varieties of small fruits, including blackberries, raspberries, gooseberries, currants, and strawberries, and vineyard, with one hundred and sixty varieties of grapes.

Forest plantation of twelve acres, containing twenty varieties, of from one to twenty-five years' growth.

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Vegetable garden, with hot-beds and cold-frames, and experimental beds. Practice rows for students' budding, grafting, cultivating, and pruning.

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**Mathematics and Surveying.**—Transits, plane table, compasses, levels, chains, models, etc. Valued at \$1,300.

**Mechanics and Engineering.**—Carpenter shop, with separate benches and tools for forty-five students in each class, besides lathes, mortising machine, circular saws, band saws, planer, frier, boring machine, grinder, and general chest of tools for fine work.

Shops for iron work contain blacksmith forges to accommodate at least sixteen; brass foundry of twelve benches and large furnace for brass; iron foundry, with two-ton cupola; machine shop equipped for thirty students, including, besides hand tools, lathes, drills, planer, etc.

Inventory of material and apparatus in both shops, \$14,000.

**Kitchen Laboratory,** with ranges, cooking utensils, dining-room furnishings, dairy furniture. Valued at \$800.

**Printing Office,** with thirty pairs of cases; large fonts of 6-point, 8-point, 10-point, and 11-point Roman type; a good assortment of job type and brass rule; a Babcock cylinder press, a new Liberty quarto-medium job press, a Gordon eighth-medium job press; a mitring machine, a rule-curving machine, and a paper cutter. Value of equipment, \$4,300.

**Sewing Rooms,** with eight machines, models, patterns, and cases; worth \$700.

**Music Rooms,** with five pianos, four organs, other instruments, and nine charts; valued at \$1,300.

**Armory,** containing one hundred and fifty stands of arms (breach-loading cadet rifles, caliber .45), with accouterments; two three-inch rifled guns; also swords, uniforms, etc. Value, exclusive of arms, \$1,000.

## A Good Education Pays.

1. In dollars and cents. All testimony of statistics agrees in showing that educated laborers of all ranks have better work and better wages than the uneducated.

2. In influence and position. Careful estimates make it certain that the chances of promotion to places of trust and power among men are almost two hundred times as great to an educated man as to the uneducated man.

3. In usefulness. The bulk of good work in the world—discovery, invention, government, philanthropy, and religion—is brought about by those who learn to think by study.

4. In enjoyment. Our pleasures grow out of what we are ourselves more than from surroundings. A well-trained man sees, hears, and handles a great deal more of the world than an untrained one. All things do him more good, not so much because he owns them as because he understands them. He always has good things to think about.

## College Business.

Loans upon school-district bonds are to be obtained from the Loan Commissioner.

Bills against the College should be presented monthly, and, when audited, are paid at the office of the Treasurer in Manhattan.

All payments of principal and interest on account of bonds or land contracts must be made to the State Treasurer, at Topeka.

The INDUSTRIALIST may be addressed through Pres. Geo. T. Fairchild, Managing Editor. Subscriptions are received by Supt. J. S. C. Thompson.

Donations for the Library or Museums should be sent to the Librarian, or to Prof. Mayo, Chairman of Committee on Museums.

Questions, scientific or practical, concerning the different departments of study and work, may be addressed to the several Professors and Superintendents.

General information concerning the College and its work,—studies, examinations, grades, boarding-places, etc.—may be obtained at the office of the President, or by addressing the Secretary.

The Experiment Station should be addressed through the Secretary.

## MANHATTAN ADVERTISEMENTS.

## BOOKS AND STATIONERY.

R. E. LOFINCK deals in new and Second-hand Text-books and School Supplies of all kinds, gold pens, etc.

VARNEY'S BOOK-STORE.—Popular Head-quarters for College Text-Books and Supplies. Second-Hand Books often as good as new. Call when down town. Always glad to see you.

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## DRY GOODS.

E. A. WHARTON'S is the most popular Dry Goods Store in Manhattan. The greatest stock, the very latest styles, the most popular prices. Always pleased to show goods.

## CLOTHING.

ELLIOT & GARRETSON, Clothiers and Furnishers, invite students and all other College people to call and examine their large stock of new goods. All the desirable things in men's wear. Latest styles in every department.

KNOTSMAN CLOTHING COMPANY offers a great variety of clothing and furnishing goods at prices to suit the times. Call without fail before buying.

## WATCHES, JEWELRY.

J. Q. A. SHELDEN, "the Jeweler," Established in 1867. Watches, Clocks, and Jewelry repaired. Eames Block.

R. E. LOFINCK keeps a big stock of Watches, Clocks, Jewels, and Gold Spectacles, also Musical Instruments.

## DRUGS.

W. C. JOHNSTON, Druggist. A large line of Toilet Articles and Fancy Goods. The patronage of students is solicited.

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A. J. WHITFORD sells Stoves and Hardware at very low prices, and carries a large stock from which selections may be made. Student patronage respectfully invited.

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D. R. C. P. BLACHLY, Dentist. The famed Odontunder used for painless extracting.

## PHOTOGRAPHS.

DEWEY, the photographer, will henceforth make photographs for students at special rates, which may be learned by calling at the gallery on Poyntz Avenue.

## MEAT MARKET.

SCHULTZ BROS. offer Fresh and Salt Meats in great variety. Students are invited to call at their market on Poyntz Avenue, one door east of Fox's bookstore, or give orders to delivery wagon.

## SHAVING PARLOR.

6 BATHS, \$1.00 cash. 12 shaves, \$1.00 cash. Hair cutting a specialty. All work first-class at Pete Hostrup's Barber Shop, Next door to Postoffice.

## GENERAL MERCHANDISE.

THE SPOT CASH STORE is Headquarters for Dry Goods, Notions, Boots and Shoes, Hats and Caps, Clothing, and Ladies' Wraps. Lowest prices in the city. A complete grocery store in connection.

E. B. PURCELL, corner of Poyntz Avenue and Second Street, the largest stock in Manhattan, of everything wanted by students, consisting in part of House-keeping Goods, Books, Stationery, Boots and Shoes, Clothing, Hats and Caps, Dry Goods, Groceries, etc., etc. Goods delivered free of charge.

## PHYSICIANS.

INFIRMARY for the medical and surgical treatment of all diseases of the eye, ear, nose, and throat. Refractive errors corrected by glasses made to order for the individual case. Persons desiring to remain in the Infirmary will find complete facilities for the treatment of their case and every care taken for their comfort and cure. SOLON D. ROSS, M. D., 523, 525, 527 P'tz Av.

## A NEW BLACKBOARD COMPASS.

The Mechanical Department has produced a new blackboard compass which can be sold for a small price. They have been in use for the past two years and have given satisfaction. They are made of seasoned cherry, highly finished and with an improved joint, presenting a large friction and binding surface. Knurled brass clamping nuts on each side of the head. Handy to have. Handy to care for. Get one. 75 cents each, 6 cents extra for postage. Address O. P. HOOD, Supt., Manhattan, Kan.



### Nothing Without Labor.

This motto, a favorite one with people who do not work, contains an important truth which cannot be too fully impressed upon the young. As a matter of fact, men may acquire possession of things, but they do not seem to get a perfect title to anything without labor. The heirs to great fortunes very often turn out spendthrifts, lacking the training which would enable them to take care of their property. In the realm of learning one's attainments seem to be proportioned to the energy expended upon their acquirement. The favored son, whose education is provided for in the most liberal way, seldom distinguishes himself as much as some one who has had a hard struggle to obtain books and to master their contents without the aid of a teacher. This observation might be turned into an argument against schools and educational methods but for the fact that schools are intended for the many, not for the few geniuses who might obtain learning painfully without their aid.

For every one who has educated himself and gained distinction a thousand, perhaps, have tried and failed, but the schools train thousands up to a certain point, and if they interfere with the development of natural talents by making the pathway too easy, only a few suffer from the want of sufficient stimulus to study. The young man who has had great difficulty in acquiring elementary knowledge, having no teacher to help him, has on this account received mental training of the greatest value, and if his native powers should be great, may be expected to accomplish more than one who, with equal natural gifts, has had his training neglected.

The labor of study not only stores the memory, but trains the observing faculties and strengthens the reason. When the labor of study is minimized by the help of the teacher, the memory may be stored with facts and rules, but the reasoning faculties are left untrained, and the knowledge gained, for the time being, not being assimilated or made part of one's self, is soon dissipated or forgotten.

The advantages gained by the whole body of pupils from a system of study and the aid of teachers, while undeniable, are offset in the case of an individual of great natural powers by the making of the task too easy. He does not get enough mental exercise nor develop his own individuality. It would be better for such a man to have difficulties to overcome, and then his labor would bring to him high reward. School children should be helped—but only to help themselves; for unless they work out their own problems, and learn to observe and think as well as to memorize, their attainments will be of little more service to them than if they had bought their diplomas with ready cash.

It is not strictly true that there is nothing without labor, but it is true that the value of everything, from gold or silver to learning, is roughly measured by the value or amount of the labor required to produce it. The trade easily or quickly learned is of little importance beside those which require thought and study to work out. "Nihil sine labor" is, therefore, a good motto for teachers and pupils to keep in memory. The circumstances by which a youth may be surrounded tend largely to shape his course in life, but it cannot be said that either poverty or riches develop his character best. Elihu Burritt, the "learned blacksmith," was a poor youth, and George Washington inherited a large estate. Yet both developed great abilities in their boyhood.—*Baltimore Sun.*

### Daily Mail on the Farm.

One of the chief causes of dissatisfaction with farm life in the minds of many people, especially among young people, is the difficulty of getting mail regularly and frequently. Much has been said and written in favor of extending the free mail delivery system to the farms, all to no effect so far as I have been able to see, while little or nothing is said about what farmers may do to help themselves in this matter while they are waiting for Uncle Sam to get ready.

As a substitute for free mail delivery, a co-operative mail club is very effective and satisfactory. The writer has been a member of such a club for several months, and in that time not a day has passed (except Sundays) that the mail has not been delivered. The club consists of six members, who live an average distance of about four and a half miles from the postoffice. The last mail train of the day arrives about 2 o'clock P. M. So we have a contract signed by all the members which reads about as follows:—

#### RURAL DAILY MAIL CLUB.

We, the undersigned, do hereby agree that each one will, on the day opposite his name, go to the postoffice, and immediately after the opening of the mail in the afternoon, obtain and deliver all the mail that goes to our respective homes. It is further agreed that at each home to which there is mail to be delivered, there shall also be delivered a copy of the weather bulletin.

Then follows the days of the week (except Sunday) with a member's name opposite each day. Each member holds a copy of this agreement. Any member of this club can in thirty minutes added to the time it would take to get his own mail, deliver the mail to the other five members of the club. So that in exchange for thirty minutes riding once a week he gets his mail delivered to him the other five days of the week. Each member has a mail box on his front yard fence, so that the one delivering mail doesn't have to get off his horse. It is a source of much pleasure and sometimes real profit to get one's mail regularly every day. The weather bulletin feature is also an important one. Twice within the past week

has it told of frost, which would and did occur on the night following, and being thus forewarned we covered up such garden plants as the frost would be most likely to injure. We earnestly recommend that each community organize such a club. Having tried it, we know its advantages.—J. F. Denham, Boone County, Mo., in *Practical Farmer*.

### Wide Tires Make Good Roads.

The *Good Roads*' spirit of progress has impressed the value and necessity of wide tires upon all classes of road vehicles. Teamsters, merchants, and manufacturer in towns and cities are adopting wide tires because they find the loads haul easier and the streets wear smoother and better. Wide tires are imperative on the good roads of France; then how much more important upon our soft dirt roads. A writer in *Good Roads* says:—

"In those parts of the country where stone does not abound, and the most valuable road material is prairie mud—the first, best, and cheapest relief is to use wide tires; next, put in under-drains and keep the roads well shaped up. Such a road, properly looked after, comes very near being right for sparsely settled prairie country, and during a large part of the year is good enough for anybody, but it is absolutely necessary to use wide tires, and what is more it is profitable to the user, in that he can haul double the corn out of the field that he could have hauled with narrow tires, and he can get to town with a very much larger load, even when he is the only user of wide tires over that road, and as soon as the flat-footed wagons become general, it is not necessary to spend one-half the amount keeping up even a common dirt road.

"With proper drainage and wide tires, a long step is taken in the direction of going to town in the spring and fall. Few localities are so low that drainage is not practical, and even in the lowest 'bottoms' a road, properly raised with suitable side ditches and cross tiles, will be in good shape most of the time, but no such road will stand narrow tires. Get proper highways as soon as possible, but get wide tires now. The meanest road is made better, a fair road is much improved, a soft road is kept smooth, a good road is left so, a hard road is made harder, a smooth road is made smoother, a rough road is leveled, all roads last longer, larger loads can be hauled, larger bank accounts may be maintained, better profits for the farmer, better prices for the consumer, better nature will prevail, and better citizens are made by the use of wide tires. Therefore get wide tires first, and good roads will be easier of attainment."

### Refreshing Spring.

This is the season of the year when nature is cleaning house and spreading broadcast beneath trees beautifully decorated with foliage, her carpets of green velvet. We may sometimes feel discontented with our lot, but it is never at this time of year. The very air is redolent with the flavor of apple-blossoms. No artist can improve on the picturesque landscapes which we may look out upon at any time, tinted as they are by that old artist-king, the sun.

How much, after all, there is in this world to cheer, comfort and brighten our lives! From now until the chill of winter's blast comes again, the poorest man in the country is rich, if he will be. He can breathe the pure air and bask in the warm sunlight; he can have enough of the fullness of the earth to satisfy his wants, and that is more than most people in the city can have.

It is anticipating a little, but it will bear quoting, anyway. James Whitcomb Riley says, in one of his poems, something that has been a great comfort to many:

Then let us one, and all, be content with our lot;  
The June is here this morning, and the sun is shinin' hot.  
Oh! let us fill our hearts up with the glory of the day,  
And banish ev'ry doubt and care and sorrow far away!  
Whatever be our station, with Providence for guide,  
Such fine circumstances ort to make us satisfied:  
For the world is full of roses, and the roses full of dew,  
And the dew is full of heavenly love that drips for me and you.

Let us look on the bright side and catch every smile as the flower catches the rays of sunlight. Oh that every laugh might prove contagious until we all shake our sides together! Our growling and grumbling is nearly always out of place. It is not only needless, but there is absolutely no excuse for it. We ought to be ashamed of ourselves—and we are.—*Farm and Fireside For May.*

### Stick to Your Work.

We are all the time saying, or thinking, if we just had something that we haven't got we would be perfectly happy. If we just made a little more money, we would save some; if we just had an extra suit of clothes, we would keep it nice. Don't you believe it! There is a very rich man in Chicago. He said that the first year he went to that city he earned only \$600, and he had a wife and two children to support. He saved \$100 out of the \$600. "If," he continued, "the young man who only makes three or five dollars a week does not save a part of his wages, then he would not save anything if he earned twenty dollars a week."

Stick to your work, and go about it cheerfully. A good temper acts on our nature and the natures of those about us like oil on the axle of our buggy. We will never get a hot box if we are always sweet-tempered.

Then the world will look so much brighter; yes, it will be brighter. Another thing, let us stick to the farm. Off there in the city it is not all smooth sailing. City life sometimes appears as attractive as a mirage in the desert; it proves almost as often as sad a delusion. The young men in the city are to be

pitted, most of them. Pinched faces, flimsy muscles, poor digestion, disappointment on every hand, this is the lot of a large majority of the young men who leave the good, dear old homestead to seek a fortune in the city—a fortune that is as hard to get into your hands as the end of the rainbow.

We love the country. God made it, but men have built the cities. These are our busy days. We must be up with the lark, and put in every hour, but as we work we are favored by the breezes, we breathe the odor of the wild flowers or the blossoms of trees, while the sunlight streams all about us, putting new life into everything it touches—that sunlight which is like God's smile.—*Farm and Fireside.*

### Terse Truths.

Strive to do thy duty; then shalt thou know what is in thee.—*Goethe.*

Great mistakes are often made like great cables, from a multitude of strands.—*Hugo.*

Good intention will no more make a truth than a good mark will make a good shot.—*Spurstone.*

No man ever did a designed injury to another, but at the same time he did a greater to himself.—*Home.*

Infamy is whose it is received. If thou art a mud wall, it will stick; if marble, it will rebound.—*Quarles.*

Man is the merriest, the most joyous, of all the species of creation. Above and below him all are serious.—*Addison.*

He fancies himself enlightened because he sees the deficiencies of others; he is ignorant, because he has never reflected on his own.—*Bulwer.*

Till thou hast conquered thyself thou art but a slave; for it is almost as well to be subjected to another's appetite as to thine own.—*Burton.*

### Labor and Earnings.

Every encouragement is given to habits of daily manual labor during the College course. Only one hour's daily practice in the industrial departments is required; but students are encouraged to make use of other opportunities for adding to their ability and means.

All labor at the College is under the direction of the superintendents of the department, and offers opportunities for increasing skill and efficiency. In regular weekly statements, the students are required to observe business forms and principles, showing from their daily account when and where the work was performed.

The shops and offices are opened afternoons and Saturdays for the accommodation of skilled students in work for their own advantage. Everywhere the student who works wins respect; and it is a matter of pride to earn one's way as far as possible.

The labor of the students in the industrial departments is principally a part of their education, and is not paid for unless the student is employed upon work for the profit of the College. Students are so employed upon the farm, in the gardens or the shops, and about the buildings. The labor is paid for at rates varying with the services rendered, from 8 to 10 cents an hour. The superintendents strive to adjust their work to the necessities of students and give them the preference in all tasks suitable for their employment. So far as practicable, the work of the shops, and offices is turned to account for their benefit; and the increasing extent of the grounds and sample gardens brings more of such labor. The monthly pay roll for the past year ranges from \$250 to \$400.

Many students obtain work in the city or upon neighboring farms, and so pay part of their expenses. In these ways a few students are able to earn their way through College. The amount so earned will vary according to the tact and zeal of the student. The majority must expect to provide by earnings outside of term time, or from other sources, for the larger part of their expenses.

The long summer vacation of three months offers opportunity for farm or other remunerative labor; and no one need despair of gaining an education if he has the ability to use his chances well.

### Library.

The College library consists of over 13,000 bound volumes and about 4,000 pamphlets, and is valued at \$26,000. It has been selected mainly with a view to supplementing the class room instruction in the various departments. All the books are indexed in a card catalogue, so that the resources of the library upon any subject may be readily learned. All students have free access to the book shelves, and may draw the books for home use, under simple and most liberal regulations.

The College subscribes for the leading literary, scientific, and agricultural journals; while the principal daily and weekly papers of Kansas and many from other States are received in exchange for the College publications. All these are kept on file for the use of students and Faculty.

The College has been designated as the depository of United States public documents for the Fifth Congressional District of Kansas. About 1,000 volumes have already been received on this account.

The library is open daily except on legal holidays. During the College terms, the library hours are from 8 A. M. to 4 P. M., and during vacation from 9 A. M. to 12 M. The Librarian or the assistant is in constant attendance, at these hours, to assist those who use the books.

### Industrial Training.

Closely adjusted to the course of study is industrial training in several of the arts, to which each student is required to devote at least one hour a day. Among the lines of training each student may select, with the approval of the Faculty, except in terms when special industrials are required. Young men may have farming, gardening, and fruit growing, woodwork and ironwork, or printing. Young women may take cooking, sewing, printing, floriculture, or music.

All young men must have their industrials for one term in the carpenter shop before completing the first year; and during the spring term of the second and the fall term of the third year, upon the farm, garden, and orchards. Young women take their industrial for one term of the first year in sewing, and for the winter and spring terms of the second year in the kitchen laboratory and dairy.



# A FREE EDUCATION

TO

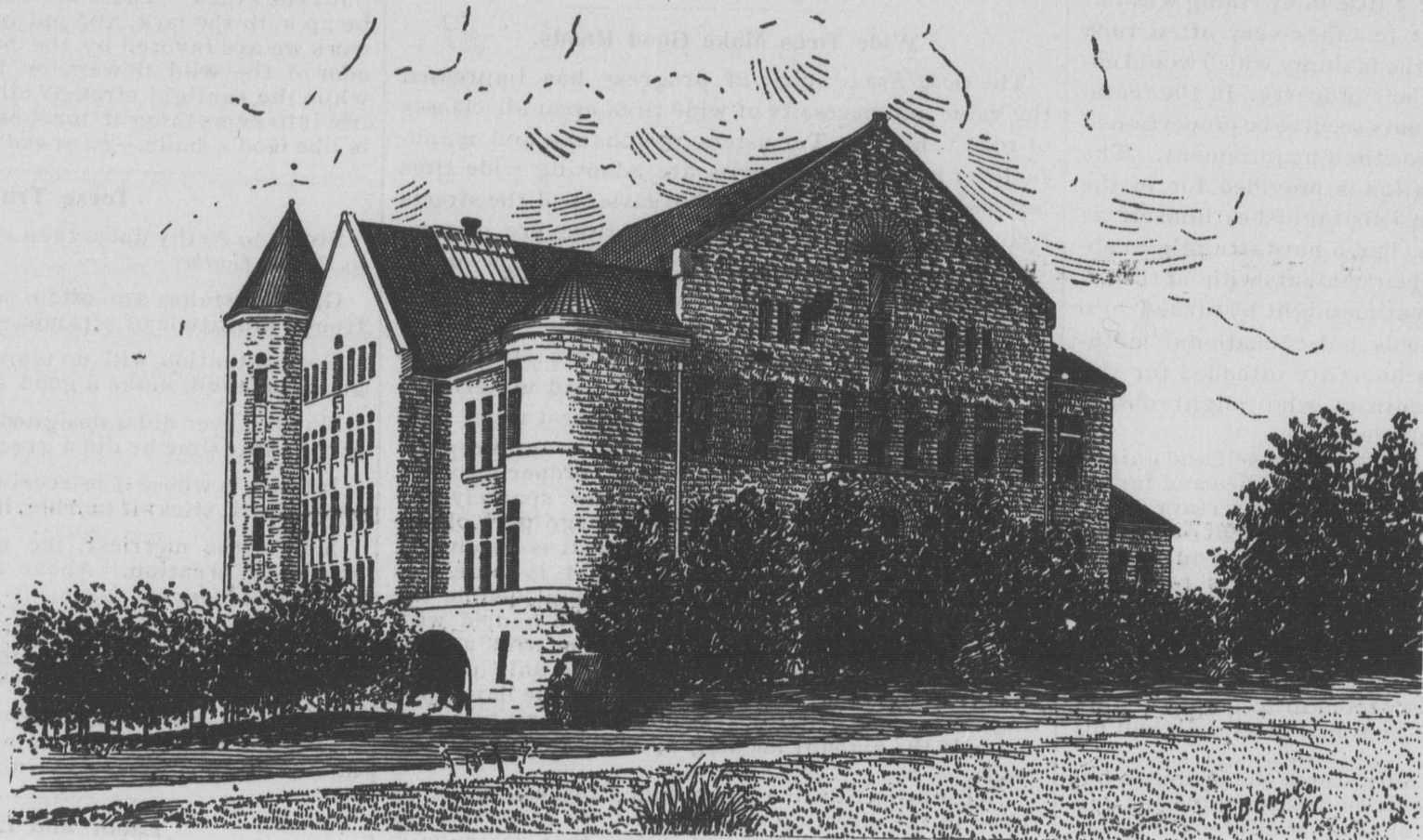
TO

YOUNG.

YOUNG

MEN

WOMEN.



LIBRARY AND SCIENCE HALL.

## THE KANSAS STATE AGRICULTURAL COLLEGE

The Largest Institution of Its Kind  
in the World, offers you this  
Privilege. Will you avail yourself of it?

A CATALOGUE  
FREE TO YOU

GEO. T. FAIRCHILD, President

### The College Catalogue.

The Thirty-second Annual Catalogue of the Kansas State Agricultural College shows many things of interest to all friends of education. The handsome illustrations show the prominent features of grounds and buildings, and the letter press gives information concerning the thoroughly practical course of study, the industrial training, expenses, and the facilities which have helped to place this institution at the head of its class in the world.

During the year just closed there were enrolled 572 students, of whom 361 were gentlemen and 211 ladies. These students represented 66 counties of Kansas and 14 other States. The graduating class numbers 36 gentlemen and 21 ladies.

During the 32 years of its existence, the College has received more than 5,000 students, about a third of whom were young women. About seventy-five per cent of these have come from farmers' homes, and after from three months to three years of study, have gone back to such homes without graduation. The number of graduates up to 1895 is 397, of whom 136 are women.



COURSE OF STUDY

Is most practical and thorough. Beginning with algebra, English analysis, and geometrical drawing, it provides accurate training in those studies which are most needed in every day life, and is strongest in those sciences which are especially related to agriculture and the mechanic arts.

A year's work in English broadens the foundation for that future character building which is possible only to him who has a working knowledge, at least, of his mother tongue.

Mathematical study is carried through three years, giving a term to trigonometry and surveying, to mechanics, and to civil engineering.

The work in chemistry, botany, physics, entomology, zoology, and veterinary science, conducted in laboratories especially designed and fitted for their several purposes, serves to develop those habits of

inquiry into, and thought upon, the laws of nature, upon a knowledge of which so much of success in life depends, and, at the same time, to supply facts for use in future study or in application to the arts of practical life.

Even so short a time as one term spent in study here brings direct results in mental discipline and increased practical knowledge.

The required course is four years, but by special arrangement the time may be extended with the privilege of elective study in advanced chemistry, botany, zoology, engineering, mathematics, economics, entomology, drawing, agriculture, horticulture, veterinary science.

The short course in agriculture, a series of lectures by members of the Faculty and specialists on subjects immediately connected with agriculture, horticulture, and the related sciences, is given during the first two weeks in February, to which all have free access.

### INDUSTRIAL ARTS.

In agriculture, horticulture, wood and iron-work, and household economy, the application of scientific truths learned in the class-room is made to the end that the hands may become the skilled and ready instruments of thoughtful minds; that the student may preserve habits of industry and mental exertion, and remain in hearty sympathy with the work by which our people thrive. Every encouragement is given to habits of daily manual labor during the entire term. All such labor which is not a part of the training, and which is of value to the College, is paid for at rates varying with the service rendered, from eight to ten cents an hour.

### MILITARY DRILL.

All young men of the First and Second-year classes take military drill under the direction of a U. S. army officer detailed for the purpose. Uniforms for use in drill exercises are furnished by the College, and the necessary arms by the Government.

### HEALTH AND CHARACTER.

This careful blending of physical and mental exercise, together with the fact that the students are not compelled to congregate in large numbers in dormitories, has given this institution a remarkable health record; while the general character of the students for good morals and good deportment cannot be excelled anywhere.

### THE LIBRARY AND APPARATUS.

All students have the freest possible access to a carefully selected scientific and general library of some 16,000 volumes, and apparatus, worth one hundred thousand dollars, is provided for use in the various scientific departments, while the work of the Agricultural Experiment Station is at all times open for their inspection, thus affording them the greatest facilities for verifying the facts and adding to the

knowledge gained elsewhere by means which must help to make of them independent thinkers.

### ADMISSION, STUDIES, ETC.

Students are admitted to this College, on examination, direct from the district schools of the State. Diplomas received on the completion of an approved county course of study, certificates of passing the grammar grades in selected city schools, and Kansas teachers' certificates are accepted in lieu of the entrance examination.

### TUITION FREE.

Endowed by the Nation and maintained by the State, this College opens its doors to all classes without charge for tuition and under conditions which make the necessary expenses for the student very light.

### STUDENTS' SOCIETIES.

Prosperous literary, scientific, and religious societies are maintained by the students.

### OTHER INFORMATION.

The fall term begins on September 9th next with examinations for admission. Copies of the catalogue



A CORNER IN THE MUSEUM.

and other points of information may be obtained by addressing the President or the Secretary, Manhattan, Kansas.

An officer of the police detail said recently: "When I was a mounted policeman I learned of a most humane and kind method of curing a balky horse. It not only never fails, but it does not give the slightest pain to the animal. When the horse refuses to go, take the front foot the fetlock and bend the leg at the knee joint. Hold it thus for three minutes and let it down, and the horse will go. The only way in which I can account for this effective mastery of the horse is that he can think of only one thing at a time, and having made up his mind not to go, my theory is that the bending of the leg takes his mind from the original thought."—*Baltimore Weekly Sun*.